SCRUBTEC 770 S
SCRUBTEC 770 L
SCRUBTEC 784 S
SCRUBTEC 784 L
SCRUBTEC 795 S
SCRUBTEC 795 L

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Nilfisk ALTO

Why Compromise

Operator's Manual

U.S. Patent No. 6,760,947; No. 6,105,192; No. RE39,581 (Deluxe Machines)

EN **English (2-30)**

Parts List (31-67)

READ THIS MANUAL

Form No. 70935A 11/07, Revised 12/08

Printed in the U.S.A.

READ THIS BOOK

This book has important information for the use and safe operation of this machine. Failure to read this book prior to operating or attempting any service or maintenance procedure to your Nilfisk ALTO machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. If your operator(s) cannot read this manual, have it explained fully before attempting to operate this machine.

All directions given in this book are as seen from the operator's position at the rear of the machine.

For new books write to: Nilfisk ALTO, 2100 Highway 265, Springdale, Arkansas 72764.

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OPERATOR SAFETY INSTRUCTIONS

DANGER: **Failure to read and observe all DANGER statements could result in severe bodily injury or death. Read and observe all DANGER statements found in your Owner's Manual and on your machine.**

WARNING: **Failure to read and observe all WARNING statements could result in injury to you or to other personnel; property damage could occur as well. Read and observe all WARNING statements found in your Owner's Manual and on your machine.**

CAUTION: **Failure to read and observe all CAUTION statements could result in damage to the machine or to other property. Read and observe all CAUTION statements found in our Owner's Manual and on your machine.**

DANGER: Failure to read the Owner's Manual prior to operating or attempting any service or maintenance procedure to your Nilfisk ALTO machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. If your operator(s) cannot read English, have this manual explained fully before attempting to operate this machine.

DANGER: Operating a machine that is not completely or fully assembled could result in injury or property damage. Do not operate this machine until it is completely assembled. Inspect the machine carefully before operation.

DANGER: Machines can cause an explosion when operated near flammable materials and vapors. Do not use this machine with or near fuels, grain dust, solvents, thinners, or other flammable materials. This machine is not suitable for picking up hazardous dust.

DANGER: Lead acid batteries generate gases which can cause an explosion. Keep sparks and flames away from batteries. Do not smoke around the machine. Charge the batteries only in an area with good ventilation. Make sure that you unplug the AC charger from the wall outlet before operating the machine.

DANGER: Working with batteries can be dangerous! Always wear eye protection and protective clothing when working near batteries. Remove all jewelry. Do not put tools or other metal objects across the battery terminals, or the tops of the batteries.

DANGER: Using a charger with a damaged power cord could result in an electrocution. Do not use the charger if the power cord is damaged.

WARNING: Operating this machine from anywhere other than the back of the machine could result in injury or damage. Operate this machine only from the rear.

WARNING: This machine is heavy. Get assistance before attempting to transport or move it. Use two able persons to move the machine on a ramp or incline. Always move slowly. Do not turn the machine on a ramp. If operating machine on a gradient over 2%, do not stop, turn or park. Read the "Procedures For Transporting" in this manual before transporting.

WARNING: Machines can topple over if guided over the edges of stairs or loading docks and cause injury or damage. Stop and leave this machine only on a level surface. When you stop the machine, turn the key "OFF". Set the parking brake.

WARNING: Maintenance and repairs performed by unauthorized personnel could result in damage or injury. Maintenance and repairs must be performed by authorized Nilfisk ALTO personnel only.

WARNING: Any alterations or modifications of this machine could result in damage to the machine or injury to the operator or other bystanders. Alterations or modifications not authorized by the manufacturer voids any and all warranties and liabilities.

WARNING: Electrical components of this machine can "short-out" if exposed to water or moisture. Keep the electrical components of the machine dry. Wipe the machine down after each use. For storage, keep the machine in a dry building.

WARNING: Operating a machine without observing all labels and instructional information could result in injury or damage. Read all machine labels before attempting to operate. Make sure all of the labels and instructional information are attached or fastened to the machine. Get replacement labels and plates from your Nilfisk ALTO distributor.

WARNING: Wet floor surfaces can be slippery. Water solutions or cleaning materials used with this type of machine can leave wet areas on the floor surface. These areas can cause a dangerous condition for the operator or other persons. Always put "Caution" signs around/near the area you are cleaning.

WARNING: Improper discharge of waste water may damage the environment and be illegal. The United States Environmental Protection Agency has established certain regulations regarding discharge of waste water. Also, city and state regulations regarding this discharge may be in your area. Understand and follow the regulations in your area. Be aware of the environmental hazards of chemicals that you dispose.

CAUTION: Use of this machine to move other objects or to climb on could result in injury or damage. Do not use this machine as a step or furniture. Do not ride on this machine.

CAUTION: Your machine warranty will be voided if anything other than genuine Nilfisk ALTO parts are used on your machine. Always use Nilfisk ALTO parts for replacement.

English ***Correct Disposal of This Product (Waste Electrical & Electronic Equipment)***

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

Introduction

Introduction:

Nilfisk ALTO's newly designed Scrubtec 795, 784 & 770 automatic scrubbers are efficient and superior floor cleaning machines. The Scrubtec 795 uses two brushes or pads to scrub a path 97 cm wide. The Scrubtec 784 uses two brushes or pads to scrub a path 84 cm wide. The Scrubtec 770 uses two brushes or pads to scrub a path 71 cm wide. A squeegee wipes the floor while the vacuum motor removes the dirty solution from the floor - all in one pass.

The Scrubtec 795, 784 & 770 automatic scrubbers come complete with six - 6 volt batteries, five battery connector cables, two battery cables, either two brushes or two pad drivers, and one operator's manual.

SPECIFICATIONS:

Model	Scrubtec 795 S	Scrubtec 784 S	Scrubtec 770 S
Motor, Vac	1 HP (.74kw) three stage tangential discharge	1HP (.74kw) three stage tagential discharge	1HP (.74kw) three stage tagential discharge
Power Supply	36 volt (6-6V batteries) 250AH, 330AH	36 volt (6-6V batteries) 250AH, 330AH	36 volt (6-6V batteries) 250AH, 330AH
Solution Tank	30 gallon (114 liter)	30 gallon (114 liter)	30 gallon (114 liter)
Recovery Tank	30 gallon (114 liter)	30 gallon (114 liter)	30 gallon (114 liter)
Motors, Brush (2)	1 hp PM (.74kw)	1 hp PM (.74kw)	1 hp PM (.74kw)
Motor Traction	.50 hp PM (.37kw)	.50 hp PM (.37kw)	.50 hp PM (.37kw)
Brushes (2)	19 inch (48cm) w/.5" (1.5cm) overlap	17 inch (43cm) w/.5" (1.5 cm) overlap	14 inch (36cm) w/.5" (1.5 cm) overlap
Brush Speed	200 rpm	200 rpm	200 rpm
Brush Pressure	Variable 150 lbs. - 220 lbs.	Variable 150 lbs. - 220 lbs.	Variable 150 lbs. - 220 lbs.
Speed, Forward	Variable to 230 ft./min.	Variable to 230 ft./min.	Variable to 230 ft./min.
Speed, Reverse	Variable to 180 ft./min.	Variable to 180 ft./min.	Variable to 180 ft./min.
Charger	36V, 21A, 115V/60hz	36V, 21A, 115V/60hz	36V, 21A, 115V/60hz
Length	68.28 inches (173 cm)	67 inches (170 cm)	65.0 inches (165 cm)
Width - Machine	40.33 inches (102 cm)	35.70 inches (91 cm)	30.0 inches (76 cm)
Height	43.75 inches (112cm)	43.75 inches (112 cm)	43.75 inches (112 cm)
Cleaning Rate	42,000 sq ft/hr (3,901 sq. m/hr)	35,000 sq ft/hr (3,252 sq. m/hr)	29,700 sq ft./hr (2,750 sq ft./hr)
Cleaning Swath	38 inch (97 cm)	33 inch (84 cm)	28 inch (71 cm)
Grade Cleaning	6° Incline	6° Incline	6° Incline
Weight w/Batteries (330AH)	1025 lbs. 465kg	1015 lbs. 460kg	1005 lbs. 456kg
Shipping Weight w/batteries (330AH)	1328 lbs. 602kg	1318 lbs. 598kg	1308 lbs. 593kg
Noise (EN ISO 3744:1995)	<70 dBA	<70 dBA	<70 dBA
Vibration (EN ISO 2631-1: 1997 (E))	<2.5 m/s^2	<2.5 m/s^2	<2.5 m/s^2

SPECIFICATIONS:

Model	Scrubtec 795 L	Scrubtec 784 L	Scrubtec 770 L
Motor, Vac	1 HP (.74kw) three stage tangential discharge	1HP (.74kw) three stage tagential discharge	1HP (.74kw) three stage tagential discharge
Power Supply	36 volt (6-6V batteries) 250AH, 330AH	36 volt (6-6V batteries) 250AH, 330AH	36 volt (6-6V batteries) 250AH, 330AH
Solution Tank	30 gallon (114 liter)	30 gallon (114 liter)	30 gallon (114 liter)
Recovery Tank	30 gallon (114 liter)	30 gallon (114 liter)	30 gallon (114 liter)
Motors, Brush (2)	1 hp PM (.74kw)	1 hp PM (.74kw)	1 hp PM (.74kw)
Motor Traction	.50 hp PM (.37kw)	.50 hp PM (.37kw)	.50 hp PM (.37kw)
Brushes (2)	19 inch (48cm) w/.5" (1.5cm) overlap	17 inch (43cm) w/.5" (1.5 cm) overlap	14 inch (36cm) w/.5" (1.5 cm) overlap
Brush Speed	200 rpm	200 rpm	200 rpm
Brush Pressure	Variable 140 lbs. - 220 lbs.	Variable 140 lbs. - 220 lbs.	Variable 140 lbs. - 220 lbs.
Speed, Forward	Variable to 230 ft./min.	Variable to 230 ft./min.	Variable to 230 ft./min.
Speed, Reverse	Variable to 180 ft./min.	Variable to 180 ft./min.	Variable to 180 ft./min.
Charger	36V, 21A, 115V/60hz	36V, 21A, 115V/60hz	36V, 21A, 115V/60hz
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Shipping Weight w/batteries (330AH)	1328 lbs. 602kg	1318 lbs. 598kg	1308 lbs. 593kg
Noise (EN ISO 3744:1995)	<70 dBA	<70 dBA	<70 dBA
Vibration (EN ISO 2631-1: 1997 (E))	<2.5 m/s^2	<2.5 m/s^2	<2.5 m/s^2

PROCEDURES FOR TRANSPORTING

How To Put The Machine In A Van Or Truck

WARNING: The machine is heavy. Make sure you use two able persons to assist the machine in climbing the ramp.

1. Make sure the loading ramp is at least 2.4m long, and strong enough to support the machine.
2. Make sure the ramp is clean and dry.
3. Put the ramp in position.
4. Remove squeegee assembly, brush housings, & brushes or pad drivers before loading.
5. Turn key switch "ON".
6. Align the machine on a level surface 3.1m in front of the ramp.
7. Put the traverse speed switch in the "HI" position.
8. Press one or both forward switches.
9. Push the machine to the top of the ramp.
10. Turn the key switch "OFF".
11. Fasten the machine to the vehicle.

How To Remove The Machine From A Van Or Truck

1. Make sure there are no obstructions in the area.
2. Make sure the unloading ramp is at least 2.4m long and strong enough to support the machine.
3. Make sure the ramp is clean and dry.
4. Put the ramp in position.
5. Unfasten the machine.

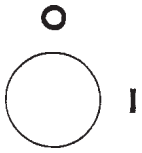
WARNING: The machine is heavy. Make sure you use two able persons to assist in moving the machine down the ramp.

6. Turn the key switch "ON".
7. Carefully and slowly, drive the machine to the top of the ramp by pressing and holding either of the forward switches and the reverse switch.
8. Put the traverse speed switch to the mid range speed setting. As the machine begins to travel down the ramp, maintain a slow downward speed by pressing either of the forward switches.
9. Replace squeegee assembly, brush housings, & brushes or pad drivers after the machine is unloaded and ready to use.

SYMBOLS USED ON SCRUBTEC 770, 784, 795

SYMBOLS USED ON SCRUBTEC 770 S, 784 S & 795 S SCRUBTEC 770 L, 784 L, 795 L

Hazard Alert Symbol

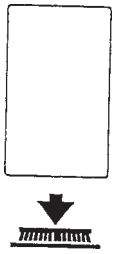


On/Off Key Switch

Power

Traverse Speed Control

SYMBOLS USED ON SCRUBTEC 770 S, 784 S & 795 S



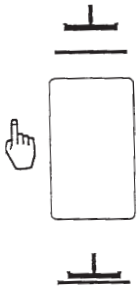
Additional Brush Pressure

Brush Up/Down

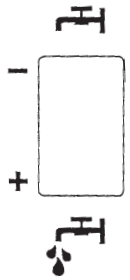
Charge/Battery Meter

Solution Control

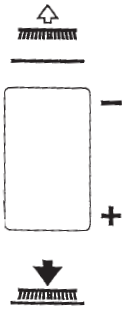
SYMBOLS USED ON SCRUBTEC 770 L, 784 L & 795 L



Squeegee Up/Down



Solution Control



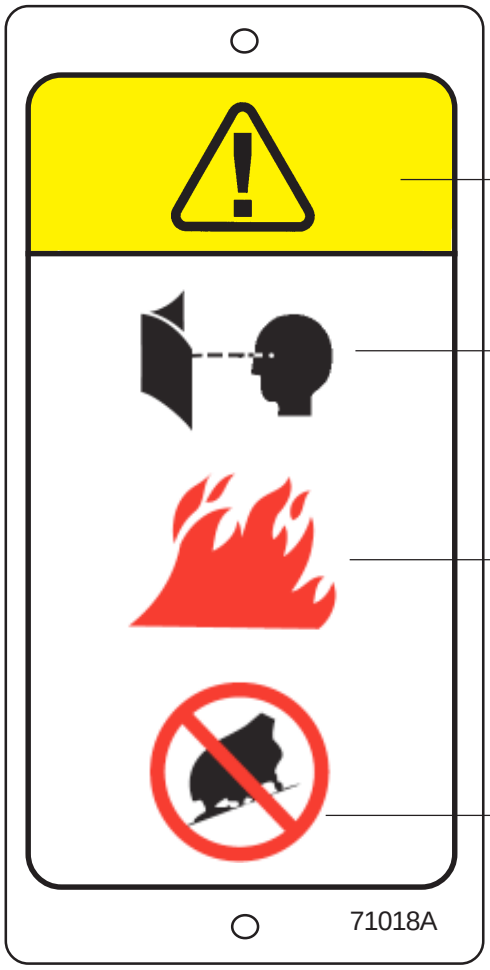
Brush Up/Down

Hour Meter Switch

Charge Indicator

One Touch Switch

SYMBOLS USED ON SCRUBTEC 770, 784, 795

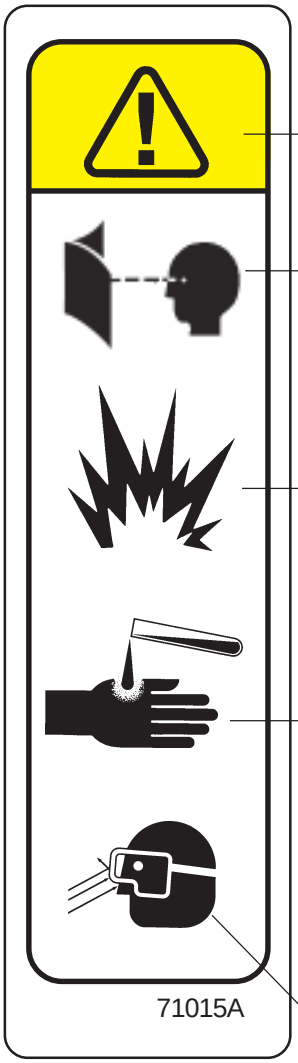


WARNING

READ OPERATOR'S MANUAL BEFORE OPERATING THIS MACHINE

RISK OF FIRE
- Use only commercially available floor cleaners and waxes intended for machine operation.
- Do not use flammable materials.

RISK OF INJURY OR DAMAGE TO MACHINE
- Do not turn, stop or leave machine on a ramp or dock.



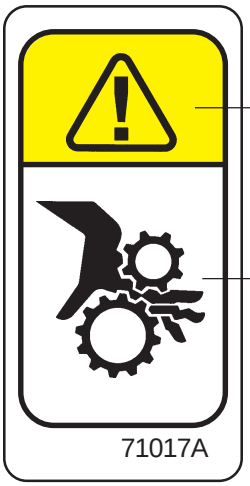
WARNING

READ OPERATOR'S MANUAL BEFORE OPERATING THIS MACHINE

EXPLOSIVE GASES, CAN CAUSE SEVERE INJURY, DEATH OR DAMAGE TRANSFORMER.
- Keep flammable materials away from batteries. Charge in a cool well ventilated area.

BATTERIES CONTAIN SULFURIC ACID. CAN CAUSE SEVERE INJURY.
- Avoid contact with skin eyes, or clothing. If contact, flush with water. Get medical attention. If internal. contact call physician.

WEAR PROTECTIVE EYEGEAR.



WARNING

MOVING PARTS. CONTACT CAN CAUSE SEVERE INJURY.
- Do not place hands or feet under machine when in use.

WARNING

FALLING PARTS CAN CAUSE SEVERE INJURY.
- Make sure tank is secure before servicing.

MACHINE CONTROL PANEL SRUBTEC 770 S, 784 S & 795 S

Key Switch (See Figure #1, Item "A")
The key switch turns "ON" the power to the control panel. "0" is "OFF" and "I" is "ON".

Traverse Speed Switch (See Figure #1, Item "B")
The speed control varies from low to high speed. To increase the speed, turn the knob to the right. To decrease the speed, turn the knob to the left.

Brush Up/Down Switch (See Figure #1, Item "C")
The brush switch has two positions: "Up" positions the brushes up; "Down" positions the brushes on the floor. The brush motors start when the brushes are down and the traverse switch is depressed.

Increase Brush Pressure Switch (See Figure #1, Item D)
This switch is used to increase the brush pressure. Increased brush pressure may be required when stripping or cleaning heavily soiled floors. To increase brush pressure, first lower the brushes by pressing the brush up/down switch (Item "C") to the down position. This will lower the brushes to the normal scrub position. To increase brush pressure, press and hold the switch (Item "D") until the desired brush pressure is reached or the brush deck stops moving downward. To reposition the brush pressure to normal scrub, press the brush up/down switch (Item "C") to the up position and after the brush deck is completely raised, then return the switch to the down position for normal scrub.

Solution Control Knob (See Figure #1, Item "E")
The solution control knob regulates the flow of cleaning solution to the floor. To increase the flow turn the knob clockwise. To decrease the flow, turn the knob counter-clockwise.

Forward Switch (See Figure #1, Item "F")
The forward switch turns the traverse motor "on" and if the brush motors are in the down position, it also activates the brush motors and solution control module. Either the right or the left switch can be used.

Reverse Switch (See Figure #1, Item "G")
The reverse switch, when used in conjunction with one of the forward switches, causes the machine to reverse direction. The reverse speed is 70% of the forward speed.

Charge / Battery Meter (See Figure #1, Item "H")
The charge/battery meter indicates the amount of charge that is left in the batteries while the machine is in use. When the battery pack gets too low the red light will begin flashing and the brush/pad motors will shut off.

Circuit Breakers (See Figure #1, Item "I"-"M")
The circuit breaker reset buttons are located on the control panel. The breakers are located as follows: Item I & J - Brush Motors (35A); Item K - Traverse Motor (30A); Item L - Vac Motor (25A); Item M - Actuator Motor, Brush Head (5A)

If a circuit breaker trips, determine which motor is not operating and turn the key switch "OFF". Wait five minutes and push the reset button back in. Turn the key switch "ON", and try again. An authorized service person should be contacted if the breaker trips again.

Hour Meter (See Figure #1, Item "N")
The hour meter indicates the number of hours the machine has operated. It runs only when the machine is moving forward or reverse.

MACHINE CONTROL PANEL SRUBTEC 770 S, 784 S & 795 S

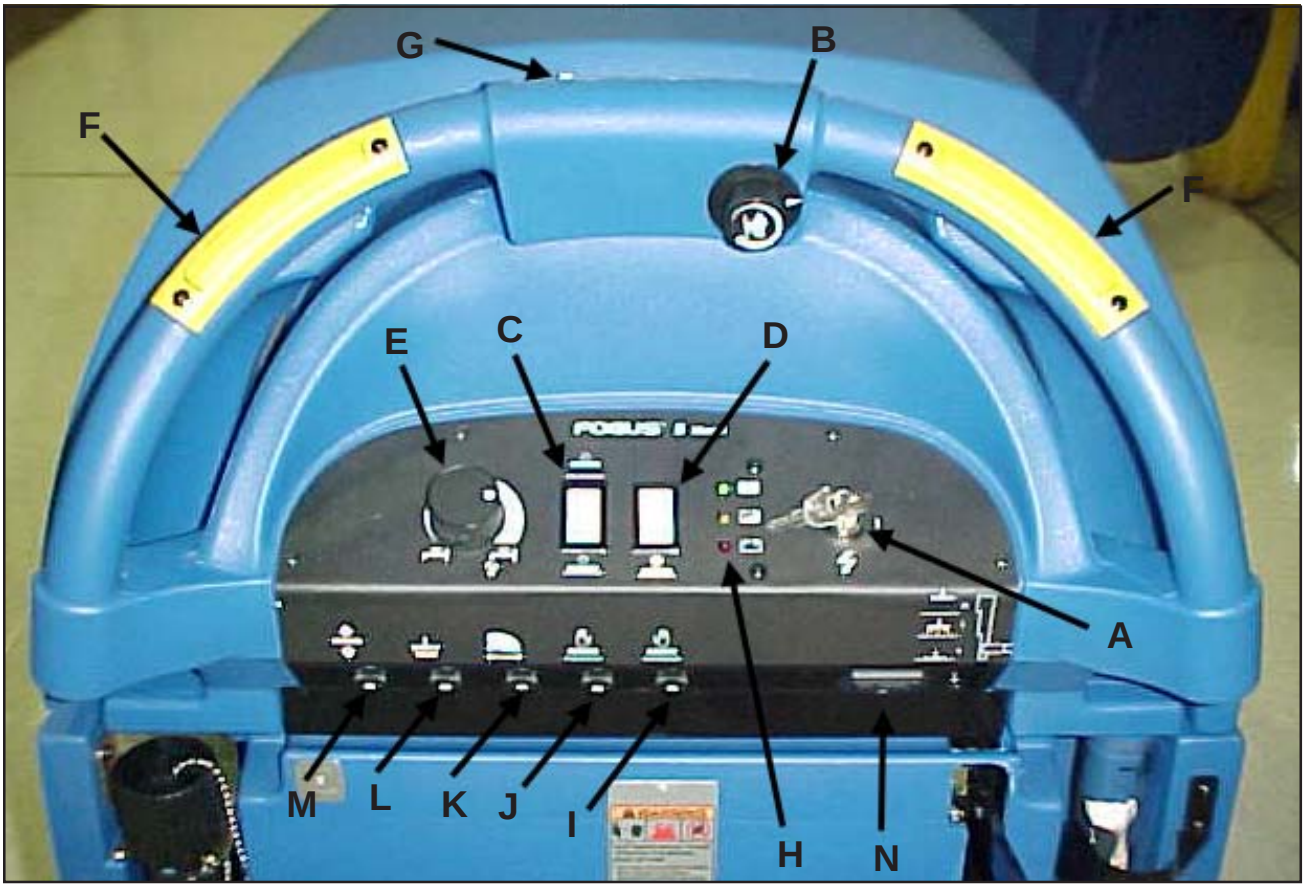


Figure #1

MACHINE CONTROL PANEL SRUBTEC 770 L, 784 L & 795 L

Key Switch (See Figure #2 Item "A")
The key switch turns "ON" the power to the control panel. "O" is "OFF" and "I" is "ON".

Traverse Speed Switch (See Figure #2, Item "B")
The speed control varies from low to high speed. To increase the speed, turn the knob to the right. To decrease the speed, turn the knob to the left.

Squeegee Up/Down Switch (See Figure #2, Item "C")
The squeegee switch is used to raise and lower the squeegee and to turn on and off the vacuum motor. The squeegee will lower and the vacuum motor will turn on when the switch is placed in the lower position. To raise the squeegee, place the switch in the up position. The vacuum motor will stop, after a short delay, when the switch is placed in the up position.

The middle switch position is used for the one touch control. The squeegee will raise and lower and the vacuum will turn on and off automatically when the one touch control function is used. **NOTE: The squeegee switch must be in the middle position for the squeegee and vacuum to operate properly with the one touch feature.**

Brush Up/Down Switch (See Figure #2, Item D)
To lower brush head, push the brush switch in the down (+) position. To increase brush pressure, continue to push the brush switch in the down (+) position until the desired pressure is reached or until brush head travel stops. The brush motors will start and solution will flow (provided the solution is turned "ON") when the machine begins to traverse. To raise the brush head, push the brush switch in the up (-) position until the brush head travel stops or desired position is reached.

Solution Flow Control (See Figure #2, Item "E")
The solution flow switch regulates the flow of chemical solution to the floor. To increase the flow, push the solution flow switch in the down (+) position until desired flow is reached. To decrease the flow, push the solution flow switch in the up (-) position until the desired flow is reached. To shut off the solution, push the solution flow switch in the up (-) position until no indicators are visible on the display. **NOTE: DO NOT run dry! NOTE: No solution will flow when the machine does not traverse.**

Forward Switch (See Figure #2, Item "F")
The forward switch turns the traverse motor "on" and if the brush motors are in the down position, it also activates the brush motors and solution control module. Either the right or the left switch can be used.

Reverse Switch (See Figure #2, Item "G")
The reverse switch, when used in conjunction with one of the forward switches, causes the machine to reverse direction. The reverse speed is 70% fo the forward speed.

One Touch (See Figure #2, Item "H")
The one touch button is a green button that lowers and raises the brush head and squeegee with one touch. NOTE: For more information about the one touch feature see the section "How to Operate the Machine".

LCD Display (See Figure #2, Item "I")
The main display indicates the state of battery charge, brush head, solution and squeegee status. It will also display machine run hours and error codes. NOTE: When the battery charger gets too low the battery display will begin flashing and the brush/pad motors will shut off.

Display Button (See Figure #2, Item "J")
Pressing the black display button will toggle between the main machine functions and the hour meter. The hour meter indicates the number of hours the machine has operated. It displays brush motor, vacuum motor, traverse motor and total key on hours.)

Circuit Breakers (See Figure #2, Item "K", "L", "M")
The circuit breaker reset buttons are located on the control panel. The breakers are located as follows: Item "L" and "M" - Brush Motors (35A); Item N - Key Switch (5A).

If a circuit breaker trips, determine which motor is not operating and turn the key switch "OFF". Wait five minutes and push the reset button back in. Turn the key switch "ON", and try again. An authorized service person should be contacted if the breaker trips again.

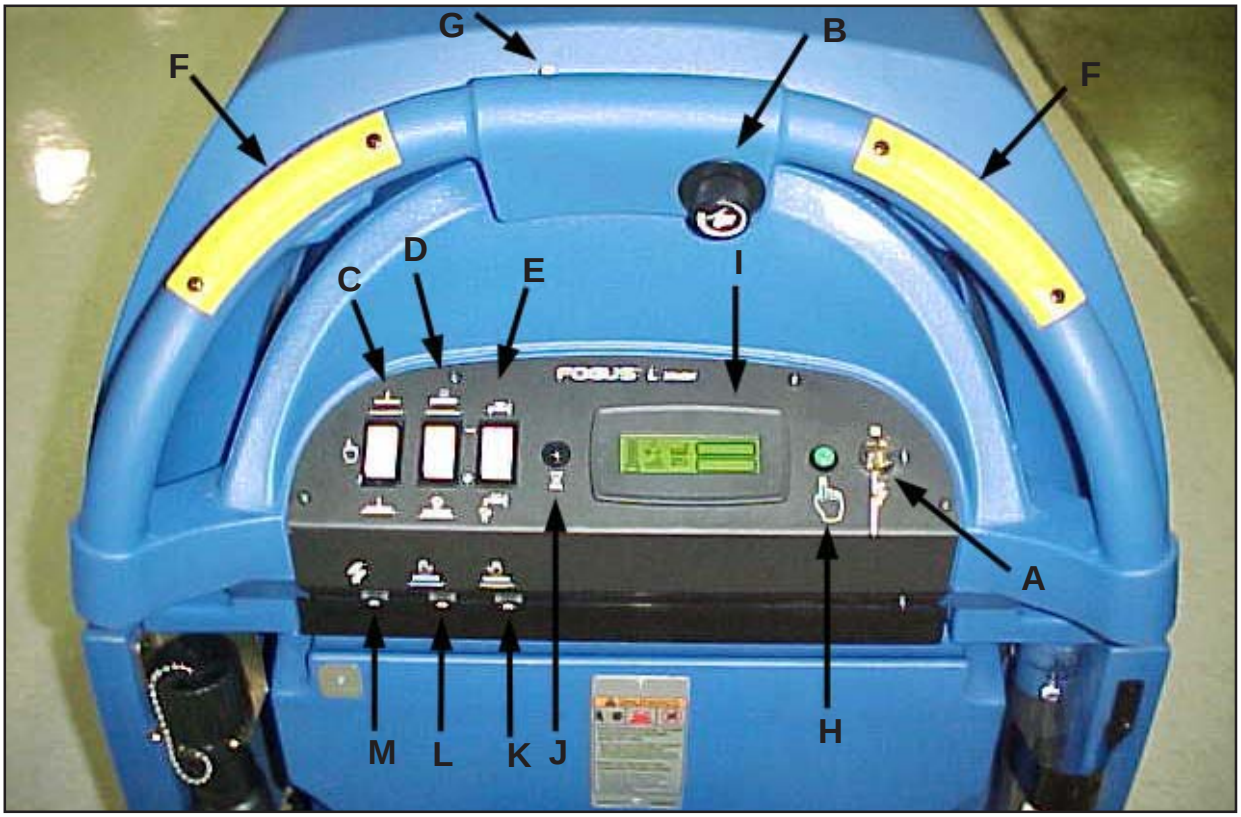


Figure #2

Display Screens For SCRUBTEC 770 L, 784 L, 795 L

Position arrow indicating current position of squeegee (up or down)

Indicators are on all the time showing current settings.

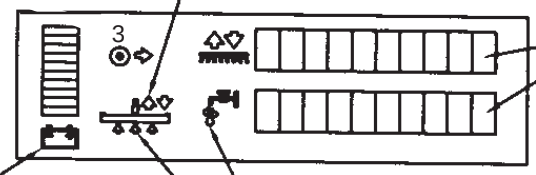
Water “droplets” off when solution is off and they are flashing when solution is on.

“Battery” blinks when low voltage occurs.

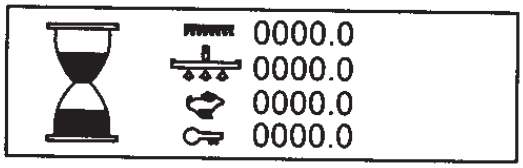
Arrows indicating vacuum status. They are flashing when vac is on and off when vac is off.

Screens Available to Operator

SCREEN 1

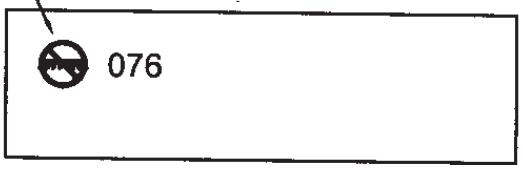


SCREEN 2



Example

SCREEN 3 (Diagnostic)



The Diagnostic only. It will not show unless a fault with the machine occurs. When the fault happens the icon and error code will be displayed.

See "Common Error Codes" at end of "Maintenance Section".

MACHINE CONTROLS & FEATURES

Squeegee Lift Handle ("S Class" models only) See Figure #3a, 3b, & 3c.
The squeegee lift handle is located below the control handles on the right side. It is used to raise or lower the squeegee. The vac motor is turned on when the handle is lowered.

Parking Brake (Optional)See Figure #4.
The parking brake prevents movement of the machine. The brake is located on the left hand side of the transaxle motor. Turn the key switch off or disconnect the power to the battery to apply the brake.

There is a mechanical lever located on the brake. This lever is an override. To manually release the brake, rotate the lever toward the rear of machine (counter clockwise). To return the brake to normal or to apply the brake, rotate the lever towards the front of the machine (clockwise).
NOTE: If the lever is left in the override position, the brake will not function with the key switch, and the machine will not operate.

CAUTION: Do not activate the brake while the machine is moving.

Float Shut Off See Figure #5.
The shut-off switch for the vac motor is located in the recovery tank. It automatically turns off the vac motor when the recovery tank is full.

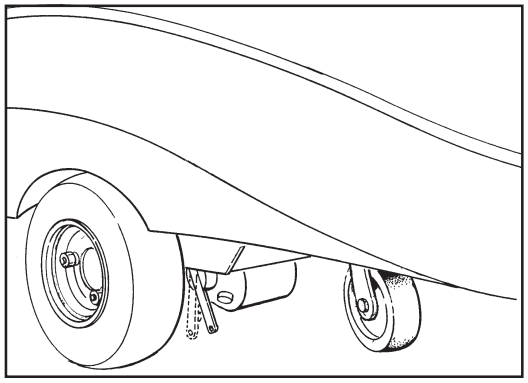


Figure #4

Figure #5

Figure #3a

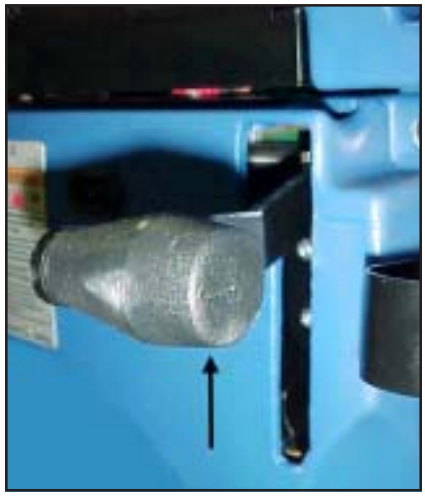


Figure #3b

Figure #3c

HOW TO PREPARE THE MACHINE FOR OPERATION

How To Install The Batteries

The Scrubtec machines use six 6-volt batteries. The batteries are located in the battery compartment under the recovery tank.

To Install the batteries, follow this procedure:

1. Turn key switch off.
2. Make sure both tanks are empty.
3. Disconnect the hoses from the recovery tank (upper tank) & unplug the vac motor and float switch.
4. Remove the tank support bracket.
5. Remove the recovery tank.
6. Place the batteries in the solution tank as shown in figures 6a and 6b.

WARNING: Lifting batteries without help could result in an injury. Get help to lift the batteries. The batteries are heavy.

WARNING: Working with batteries can be dangerous. Always wear eye protection and protective clothing when working near batteries. NO SMOKING!

7. Connect the battery cables between batteries and install long battery cable assembly as indicated. See figure 6a and 6b.
8. Install the tank, reconnecting hoses and plugging in vac motor and float switch connectors. Install tank support bracket.

NOTE: Charge the batteries before using the machine.

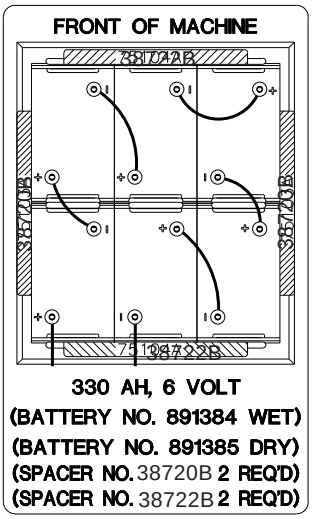


Figure #6a

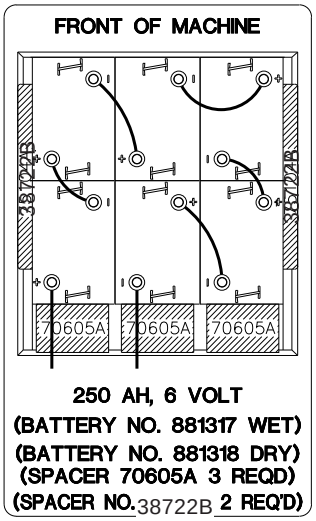


Figure #6b

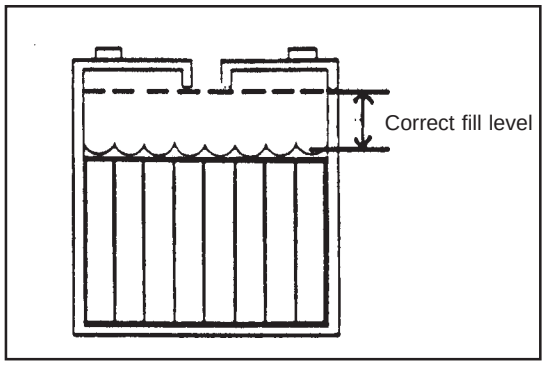


Figure #7

Battery Maintenance

The electrical power to operate the machine comes from the storage batteries. Storage batteries need preventive maintenance.

WARNING: Working with batteries can be dangerous. Always wear eye protection and protective clothing when working near batteries. NO SMOKING!

To maintain the batteries in good condition, follow these instructions:

1. Keep the electrolyte at the correct level. The correct level is between 6.35mm below the bottom of the tube in each cell and above the tops of the plates. Check the level of the electrolyte each time you charge the batteries. See figure #7.

NOTE: Check the level of electrolyte prior to charging the batteries. Be sure the plates in each cell are covered with electrolyte . Do not top off the cells prior to charging the battery. Electrolyte expands during charging. As a result, the electrolyte could overflow from the cells. Always top off the cells with distilled water after charging.

CAUTION: Irreversible damage will occur to the batteries if the electrolyte level does not cover the plates. Keep the electrolyte at the correct level.

CAUTION: Machine damage and discharge across the tops of the batteries can occur if the batteries are filled above the bottom of the tube in each cell. Do not fill the batteries up to the bottom of the tube in each cell. Wipe any acid from the machine or the tops of the batteries. Never add acid to a battery after installation.

CAUTION: Tap water may contain contaminants that will damage batteries. Batteries must be re-filled with distilled water only.

2. Keep the tops of the batteries clean and dry. Keep the terminals and connectors clean. To clean the top of the batteries, use a damp cloth with a weak solution of ammonia or bicarbonate of soda solution. To clean the terminals and connectors, use a terminal and connector cleaning tool. Do not allow ammonia or bicarbonate of soda to get into batteries.

3. Keep the batteries charged.

HOW TO PREPARE THE MACHINE FOR OPERATION

How To Charge The Batteries

WARNING: **Charging the batteries in an area without adequate ventilation could result in an explosion. To prevent an explosion, charge the batteries only in an area with good ventilation.**

WARNING: **Lead acid batteries generate gases which could explode. Keep sparks and flames away from batteries. NO SMOKING!**

To charge the batteries, follow this procedure:

1. Make sure the key switch is in the “OFF” position.
2. Before charging the batteries, the battery compartment needs to be vented. To vent compartment, tip up the recovery tank until it locks in the open position (see figure #8). To close the tank, pull up on the arm and then slowly lower the tank to the closed position.

CAUTION: **Before raising tank, be sure tank is empty.**

WARNING: **Do not operate or perform maintenance on the machine while the recovery tank is in the open position. The tank can be accidentally bumped and it may slam shut.**

3. Put the charger on a flat surface. Make sure the vents on the sides are at least two inches away from walls and other objects. Make sure there are no objects near the vents on the bottom of the charger.
4. Disconnect the battery pack connector from the batteries.
5. Connect the DC connector on the charger to the battery pack connector. See figure #8A.
6. Connect the battery charger AC cord located at the rear of the machine to a 10 amp (min) 230V properly grounded wall receptacle.
7. Observe indicator light to ensure the charging process has started. Flashing light(s) indicates that the batteries are being charged. Steady on green light indicates the batteries are fully charged.

NOTE: Make sure you plug into a circuit that is not loaded by other equipment. Wall breakers may be tripped and no charge will occur.

WARNING: **Never charge a GEL battery with an unsuitable battery charger. Carefully follow the instructions given by the manufacturer of the batteries and battery charger.**

NOTE: To prevent permanent damage to the batteries, avoid their complete discharge. Never leave the batteries completely discharged, even if the machine is not being used. When recharging the batteries, keep the recovery tank open. After every 20 recharging cycles, check the level of the electrolyte and if necessary top off with distilled water.

Figure # 8

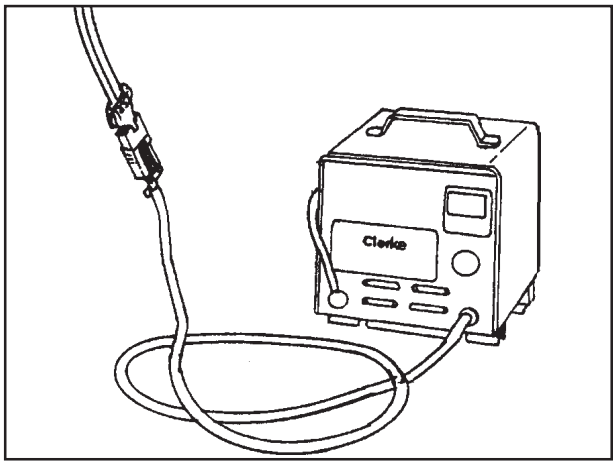


Figure 8A

HOW TO PREPARE THE MACHINE FOR OPERATION

How To Install The Brushes Or Pad Drivers

To install the brushes or pad drivers on the machine, follow this procedure:

1. Turn the key switch "ON".
2. Put the brush switch in the "UP" position.
3. Turn the key switch "OFF".
4. Go to the front of the machine.
5. Unlatch right and left brush housings and remove them. See figure #9.
6. Put a brush or pad driver under the brush motor plate. See figure #10.
7. Align the lugs on the motor gimbal with the slots in the brush gimbal.
8. Pull the brush up until the gimbal locks.
9. Repeat steps 6, 7, and 8 to install the second brush or pad driver.

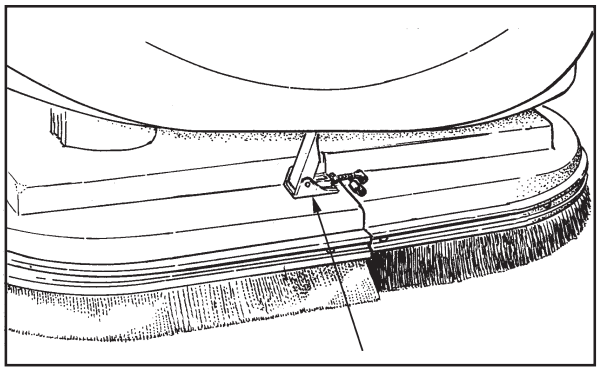


Figure #9

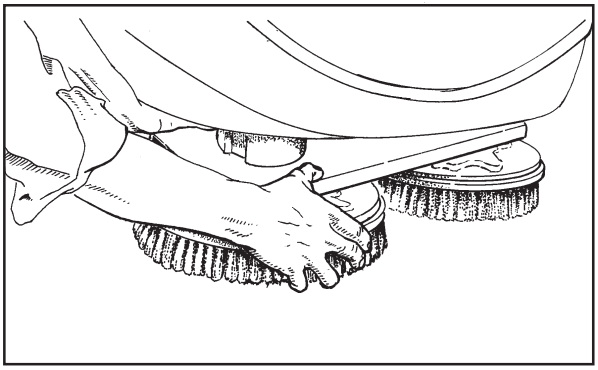


Figure #10

How To Remove The Brushes Or Pad Drivers

To remove the brushes or pad drivers from the machine, follow this procedure:

1. Turn the key switch "ON".
2. Put the brush switch in the "UP" position.
3. Turn the key switch "OFF".
4. Go to the front of the machine.
5. Push down on two sides of the brush or pad driver until the gimbals release.

HOW TO OPERATE THE MACHINE

How to Operate the One Touch System ("L Class" models only)
One touch cleaning is a feature on the new Scrubtec Walk-behind Scrubber. The factory defaults for this setting are two bars of brush pressure and four bars for solution flow and squeegee in the down position.

1. Press and release the green button for all cleaning functions to begin, see figure #11, item A.

2. The squeegee and brush head lower to the floor and the vacuum starts. NOTE: The squeegee switch must be in the center position for the squeegee to operate with the one touch feature, see figure #11, item B.

3. The brushes and solution will begin only when you begin to traverse.

4. The cleaning will be at the factory default settings, however you can reprogram these settings to your specifications. See “Reprogramming One Touch” section below.

5. To end cleaning process, press the green button again and solution will stop; brushes will raise; after a short delay squeegee will raise; and the motor will turn off.

Figure #11

NOTE: It is intended that this be done while traversing. If you stop and do it, some solution can be left on the floor.

Reprogramming One Touch
If you do not want to use the factory default settings, you may reprogram the setting by following the procedures below:

1. Place the machine in the desired scrub condition by using the one touch and individual switches.

2. Press and hold the green one touch button until you see the LCD display flash, then release the button. **NOTE: The time required should be approximately 5 seconds.**

3. When you activate or deactivate the one touch, it will now be set to your preference for cleaning. These settings will remain until you disconnect power or reprogram them. **NOTE: When programming one touch, be sure squeegee is in automatic (middle) position, otherwise you may program squeegee either up or down all the time.**

How to Return One Touch to Factory Default Settings
To restore the factory settings, follow the procedures below:

1. Press and hold the green one touch button until you see the LCD display flash two times (5 seconds between flashes), see figure 11. **NOTE: The time required for this will be approximately 10 seconds.**

2. The settings should be returned to 4 bars of solution and 2 bars of brush pressure. **NOTE: The squeegee vac switch must be in the middle position for default settings to work.**

HOW TO OPERATE THE MACHINE

How To Operate the Squeegee
("S Class" models only)

The squeegee wipes the floor while the vacuum motor removes the dirty solution from the floor. Use your right hand to lower or raise the squeegee handle. To operate the squeegee, follow this procedure:

1. To lower the squeegee and start the vac motor move the squeegee lever to the right and down. See figure #12.

2. To raise the squeegee, lift the squeegee lever up. See figure #13.

Note: The center position lets the vac motor continue to run with the squeegee off the floor to avoid drips.

How to Fill The Solution Tank

CAUTION: **Make sure water or solution does not enter the opening for the vacuum motor See figure #14.**

The solution tank can be filled in the front or through the clear drain hose at the rear of the machine. To fill the solution tank follow this procedure:

1. Remove the solution tank lid. See figure #15.

2. Fill the solution tank with water.

3. Add a cleaning chemical to the water. for the correct amount, follow the directions shown on the container.

WARNING: **Water solutions or cleaning materials used with this type of machine can leave wet areas on the floor surface. These areas can cause a dangerous condition for the operator or other persons. Always put CAUTION signs near the area you are cleaning.**

WARNING: **Machines can ignite flammable materials and vapors. Do not use with or near flammables such as gasoline, grain dust, solvents, and thinners. Only use a cleaning concentration recommended by the chemical manufacturer.**

WARNING: **Nilfisk ALTO recommends a maximum water temperature of 120°F(49°C)**

4. Replace the solution tank lid.

5. When filling the machine from the rear, position the clear drain hose against bracket and insert hose as shown in figure 16. Solution level can be viewed from the back of the machine.

Figure #12

Figure #13

Figure #14

Figure #15

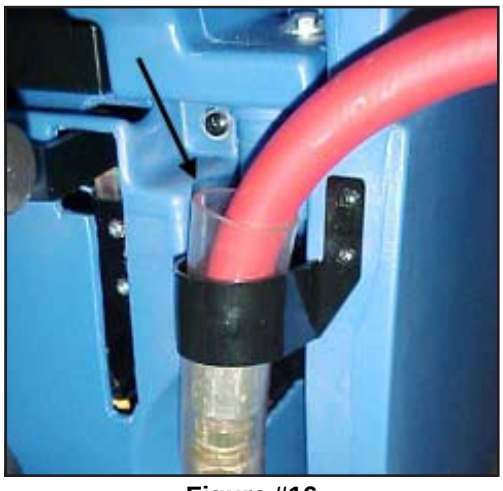


Figure #16

How To Traverse Machine

NOTE: Put the machine in the slow traverse speed (see figure #17). Use the machine in an area that has no furniture and objects until you can do the following:

1. Move the machine in a straight direction, forward and backward.
2. Stop the machine safely.
3. Move the machine in a straight direction after you turn the machine.

To move the machine, follow this procedure:

1. Turn the key switch “ON” position.
2. Put the brush switch in the "UP" position.
3. Raise the squeegee.
4. To go forward, push one or both of the yellow forward switches (see figure #18).
5. To stop the machine, release the yellow forward switches.
6. To go backward, push in on the white reverse button and one of the yellow forward switches at the same time (see figure #19).
7. To turn the machine, push the rear of the machine to the side.
8. When you stop the machine, turn the key switch "OFF".

Figure # 17

Figure #18

Figure #19

How to Clean a Floor

WARNING: Water solutions or cleaning materials used with this type of machine can leave wet areas on the floor surfaces. These areas can cause a dangerous condition for the operator or other persons. Always put CAUTION signs near the area you are cleaning.

To clean a floor, follow this procedure:

1. Put the water and a cleaning chemical in the clean solution tank.
2. Turn the key switch "ON". If one touch feature is used, press the green button and proceed to step 6 (deluxe models only).
3. Lower the squeegee.
4. Put the brush switch in the "DOWN" position.
5. Adjust the flow of clean solution to the flow desired.
6. Move the machine across the floor in the forward direction.
7. Make a 180^0 turn.

NOTE: When you make more passes across the floor, let the brushes clean approximately 5cm of the area already cleaned by the brushes.

NOTE: During most cleaning procedures, apply and remove the solution in one operation.

HOW TO OPERATE THE MACHINE

How to Clean a Very Dirty Floor

To clean a very dirty floor, follow this procedure:

1. Apply solution to the floor.
2. Do not lower the squeegee.
3. Do not activate the vacuum motor.
4. Lower the brushes and scrub the floor.
5. Leave the solution on the floor long enough for the solution to begin cleaning the floor.
6. Scrub the floor again with additional solution, picking up all the solution with the squeegee

MAINTENANCE

WARNING: Maintenance and repairs must be done by authorized personnel only.

WARNING: Always empty the solution tank and recovery tank before doing any maintenance.

WARNING: Keep all fasteners tight.

These Maintenance Procedures Must Be Done Every Day

Keep the machine clean, it will need fewer repairs and have longer life.

Do These Procedures When You Begin Your Work Period

1. Turn off key switch.
2. Unplug charger from AC outlet and wrap cord around bracket at rear of machine.
3. Make sure the recovery tank lid is on correctly (see figure #20).
4. Make sure the Screen filter over the vacuum motor is clean and in position (see figure #20).
5. Make sure the valve on the recovery drain hose is clean. Tightly close the valve.
6. Make sure brush housings and skirts are in position on the brush head.
7. Make sure the brushes are in position and installed correctly
8. Check the installation of the squeegee and squeegee hose.

Figure #20

Do These Procedures When You End Your Work

1. Drain the solution tank (Figure #21, item A) and the recovery tank (Figure #21, item B). To drain the tanks , follow this procedure:

   a. Turn the key switch "OFF".

   b. Remove the drain hose from the back of the machine.

   c. Put the end of the hose over a drain or bucket.

   d. Recovery Tank:
   Turn the valve housing to the left (see figure #22). To open the valve completely, turn the housing fully to the left and pull the housing off of the valve.

   Solution Tank:
   When hose is lowered below water level, the water will drain (see figure 23).

2. Flush the tanks. To flush the tanks, put clean water in the tank through the opening on top of the tank.

3. If a tank or drain hose has an obstruction, use a high pressure water hose to flush the tank or hose. Put the water hose into the drain hose.

4. Leave the tanks and the drain valves open to dry in the air.

5. Check the squeegee blade. Use a cloth to clean the squeegee blade. If the squeegee blade is damaged or worn, turn or replace the blade.

6. Check and clean the recovery lid gasket. Use a mild cleaning solution and rinse the parts in clean water.

Check the batteries and add distilled water as needed. The correct level is within 6.35mm of the bottom of the tube in each cell.

CAUTION: **Tap water may contain contaminants that will damage batteries. Batteries must be re-filled with distilled water only.**

WARNING: Lead acid batteries generate gases which can cause an explosion. NO SMOKING. Always wear eye protection and protective clothing when working near batteries.

Use a clean cloth and wipe the surface of the machine.

Charge the batteries. See the instruction in the section of this book called "How To Charge The Batteries".

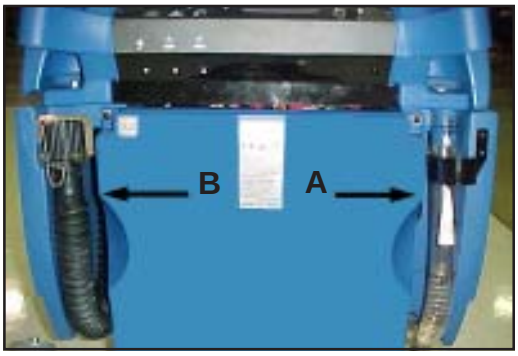


Figure #21

Figure #22

Figure #23

These Maintenance Procedures Must Be Done Every Week:

⚠ WARNING: Maintenance and repairs must be done by authorized personnel only. Always empty the solution tank and the recovery tank before doing any maintenance. Keep all fasteners tight.

⚠ WARNING: Always wear eye protection and protective clothing when working near batteries. Do not put tools or other metal objects across the battery terminals or the tops of the batteries.

⚠ CAUTION: To prevent damage to the machine, and discharge across the tops of the batteries, do not fill the batteries above the bottom of the tube in each cell. Wipe any acid from the machine or the tops of the batteries. Do not add acid to battery after installation.

NOTE: Always turn off key switch before servicing the machine.

⚠ WARNING: Always wear eye protection and protective clothing when working near batteries. NO SMOKING!

1. To inspect batteries, tip up recovery tank until it locks in up position. See Figure #24.

2. Disconnect the batteries. Use a cloth and a solution of ammonia or bicarbonate of soda to wipe the top of the batteries. Clean the battery terminals. Reconnect the batteries.

3. Check the hoses for leaks, obstructions and other damages.

4. Check and clean the filter screen in the solution hose. To clean the screen, follow this procedure:

   a. Turn the connector to the left.

   b. Remove and clean the filter screen.

   c. Install the filter screen in the hose. Turn the connector to the right to connect the hose.

5. Use a grease gun to lubricate the drive wheel and the casters. See figure #25.

6. Check tire pressure. Tire pressure should be about 50 psi (3.45 bar).

Figure #24

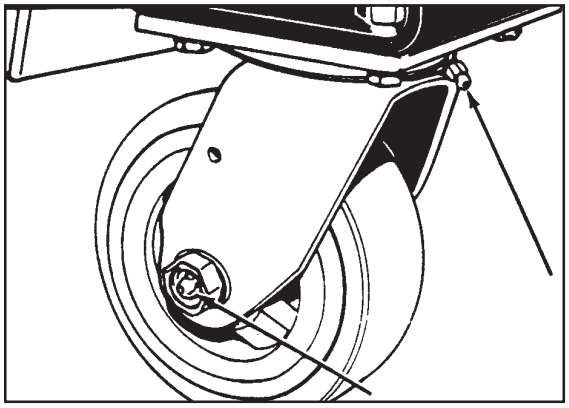


Figure #25

7. Check the squeegee and the scrub brushes or the pad drivers for damage.

8. Check the squeegee and the vacuum hose for dam age, leaks and obstructions.

Maintenance For The Squeegee

To remove the squeegee, follow this procedure:

1. Remove the squeegee assembly by loosening the two knobs that attach the squeegee to the machine. Pull the squeegee assembly off. See figure #26.

2. Inspect the squeegee blade.

3. If the blade is worn, turn the blade so that a new edge is in the wiping position.

4. Reinstall squeegee assembly on the machine.

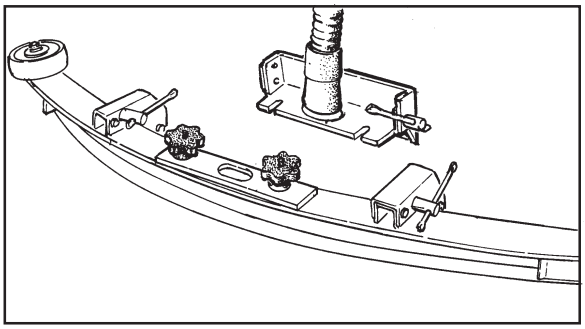


Figure #26

How To Adjust The Squeegee

The following adjustments are set at the factory, however they may require slight adjustment.

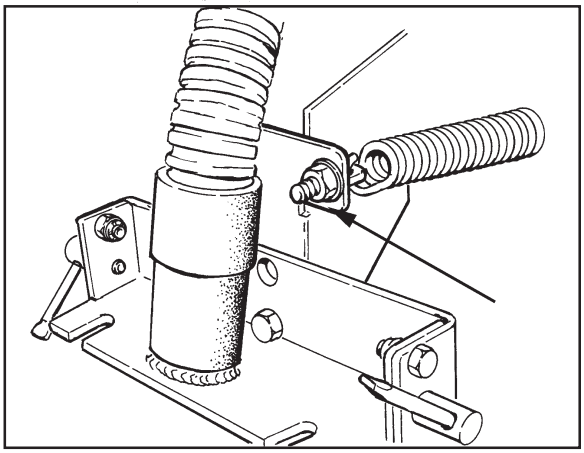


Figure #27

Adjusting Squeegee Pressure:

To adjust the pressure, refer to Figure #27. Proper adjustment will produce a uniform flare along the rear blade when the machine is moved forward. To increase pressure, tighten the nuts on each side of the swing arm. To decrease the pressure, loosen the nuts on each side.

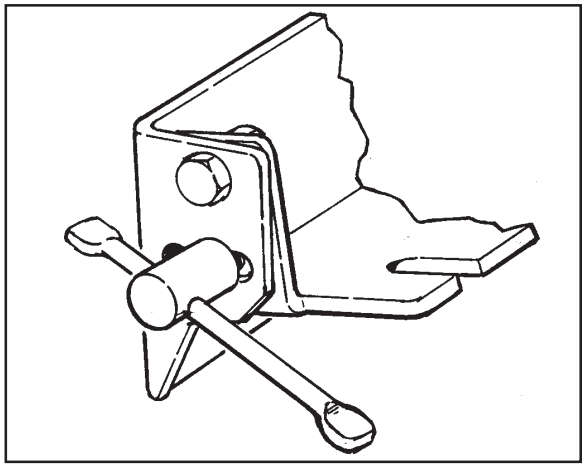


Figure #28

Adjusting Squeegee Tilt:

The tilt of the squeegee causes the rear blade to raise up in the center or on the ends, depending on which direction the tilt is changed. For tilt adjustment, refer to figure # 28. Loosen left and right screw "X". In order to bring the rear blade down in the center, tip "Y" down. To bring both ends down, tip "Y" up. Make very small adjustments and try it until a uniform flare is achieved. Changing the tilt may also require readjusting the squeegee pressure.

Adjusting Squeegee Blades
When properly installed the front blade should be approximately 0.12 above the rear blade. See figure #29.

WARNING: Maintenance and repairs must be done by authorized personnel only .

WARNING: Electrical repairs must be done by authorized personnel only.

Consult your Nilfisk ALTO Authorized Service Person to do the service procedures.

Use only genuine Nilfisk ALTO parts.

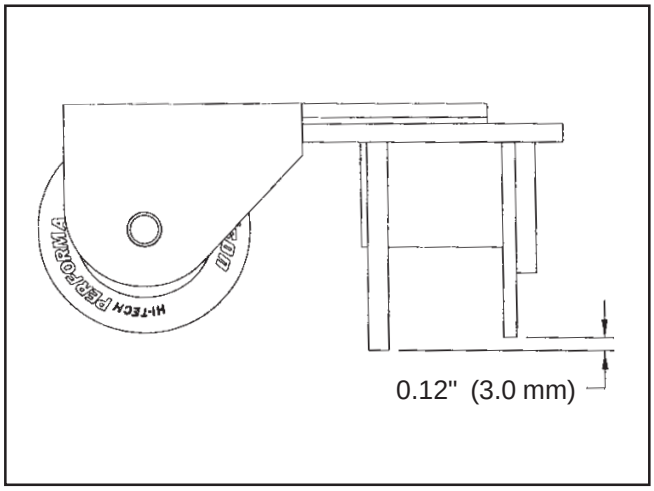


Figure #29

How to Clean the Solution Line

If the solution line becomes clogged, pull the filter assembly out from behind the brush housing (Figure 30). Turn solution vavle off. Remove the filter screen (Figure 31, B) and clean or replace it. Turn solution valve back on (figure 31, A) and push filter assembly back inside frame.

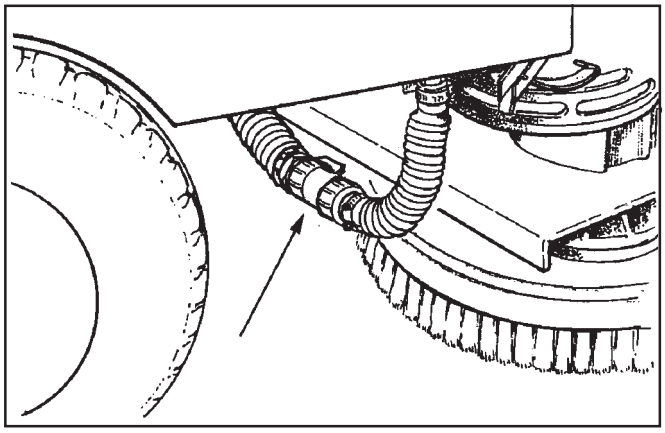


Figure #30

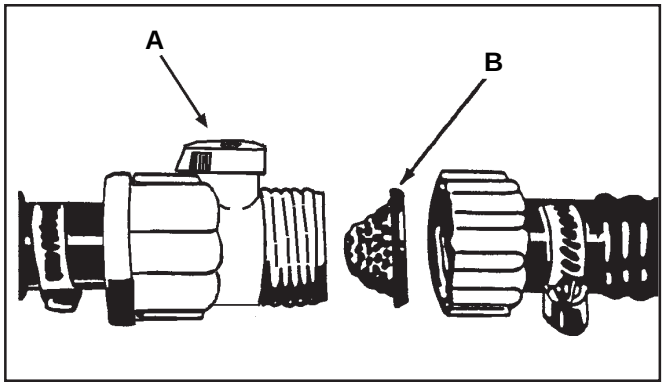


Figure #31

HOW TO CORRECT PROBLEMS IN THE MACHINE

PROBLEM	CAUSE	ACTION
The machine does not remove all the water from the floor.	The squeegee is up	Lower the squeegee.
	The vacuum tank is full.	Drain the tank.
	The screen filter is dirty.	Clean the screen filter.
	There is an obstruction or damage in the squeegee, squeegee hose or standpipe.	Remove the obstruction or repair the damage.
	The vacuum motor is not running.	Check for tripped breaker. Have an authorized service person make repairs.
	The squeegee hose is disconnected.	Connect the hose.
	The squeegee blade is damaged, worn, or incorrectly installed.	Turn or replace the squeegee blade. Correctly install the squeegee blade.
	The squeegee pressure is not correctly adjusted.	Adjust the pressure of the squeegee.
	The gaskets on the cover of the recovery tank are damaged.	Replace the gaskets.
The batteries do not give the normal running time.	The battery terminals are dirty or damaged.	Clean the terminals and connectors. Replace the damaged cables. Charge the batteries.
	The electrolyte level is too low.	Add distilled water to each cell and charge the batteries.
	The batteries are not fully charged.	Charge the batteries for a full 16 hour charge.
	The charger is damaged.	Have an authorized service person repair the charger.
	The battery is defective.	Check voltage of each cell while discharging.
	The batteries are disconnected.	Connect the batteries.
The cleaning is not even.	The scrub brushes or pads are worn.	Replace the scrub brushes or pads.
	There is damage to the brush assembly, casters or the solution valve.	Have an authorized service person make the needed repairs.
	The brush motors are not running	Check for tripped breaker, reset. Check for loose connections.
	The solution level is low.	Fill the solution tank.
		NOTE: If the motors continue to stop consult an authorized service person.
The machine does not run.	The machine loses power.	Reset the circuit breaker. Check wire connection to traverse motor.
		Replace the fuses.
		Check the batteries connections.
		Check parking brake overide lever position (if installed) NOTE: If the motors continue to stop, consult an authorized service person.

SCRUBTEC 770 L, 784 L, 795 L
Common Error Codes

ERROR CODE	CAUSE	ACTION
3100 3101 3102 3103 3104 3105	Probable short circuit of output device.	Check the traction, brush and vac motor connections on the trio and check wiring from these connectors down to the traction, brush and vac motors.
7600	Open circuit on brush motors or brush motor wiring.	Check the brush motor connection on the trio and check the wiring from this connector down to the brush motor.
7603	Possible short circuit on brush motors or wiring.	
7800	Open circuit on traction motor.	Check the traction motor connection on trio and wiring down to motor.
7802	Traction motor current has exceeded current limit for the fold back time.	Excessive driving up an incline, or machine driven up against an obstacle or step.
9000	Brushes not fitted.	Brushes
2F01	Drive system activated prior to turning key switch "ON".	Release traverse switch and reactivate.

NOTICE: IF ERROR CODE/FAULT OCCURS TURN KEY SWITCH OFF AND THEN BACK ON.

For further codes and explanations, contact a Nilfisk ALTO Service Center.

ACCESSORIES

Description	Part No.
Power Wand System Kit	10892A
ESP Recycle System Kit	10894A
Soft Caster Asm.	52127A
Care Kit	14607A
Squeegee Asm., Optional 74 cm (770 model only)	18818A
Drive Wheel, Foam Filled	59955A
Imperial Electric Parking Brake Kit	10684A
Battery Maintenance System	53390A

Optional Squeegee Blades

Machine	Blade	Type	Material	Length	Part No.
770	Inner	Optional	Urethane, Ribbed (60)	65.7 cm	30951A
770	Inner	Optional	Urethane, Notched, 1.5mm (80)	65.7 cm	30955A
770	Inner	Optional	Urethane, Ribbed (60)	91.1 cm	30952A
770	Inner	Optional-Grout	Urethane, Notched 1.5mm (80)	91.1 cm	30957A
770	Inner	Optional	Gum, Notched (35)	91.1 cm	30716A
770	Inner	Optional	Neoprene, Notched (80)	65.7 cm	30930A
770, 784	Inner	Optional	Gum, Notched (35)	102.2 cm	30717A
784	Inner	Optional	Urethane, Ribbed (60)	102.2 cm	30953A
784	Inner	Optional-Grout	Urethane, Notched 1.5mm (80)	104.1 cm	30958A
795	Inner	Optional	Urethane, Ribbed (60)	116.8 cm	30954A
795	Inner	Optional-Grout	Urethane, Notched, 1.5mm (80)	116.8 cm	30959A
795	Inner	Optional	Neoprene, Notched (80)	116.8 cm	30934A
770	Outer	Optional	Nitrile, Solid (40)	71.4 cm	30938A
770	Outer	Optional	Nitrile, Solid (40)	97.8 cm	30936A
770	Outer	Optional	Gum, Solid (35)	97.8 cm	30912A
770	Outer	Optional	Gum, Solid (35)	71.4 cm	30931A
770, 784	Outer	Optional	Gum, Solid (35)	110.4 cm	30557A
784	Outer	Optional	Gum, Solid (35)	107 cm	30913A
784	Outer	Optional	Nitrile, Solid (40)	107 cm	30937A
795	Outer	Optional	Nitrile, Solid (40)	122 cm	30939A
795	Outer	Optional	Gum, Solid (35)	122 cm	30935A

Brushes:	Size	Description	Part No.
	43.2 cm	Poly	11424B
	43.2 cm	Grit-Heavy	11425B
	43.2 cm	Grit-Medium	11430B
	43.2 cm	Grit-Lite	10384A
	43.2 cm	Soft Nylon	10875A
	35.6 cm	Poly	11427B
	35.6 cm	Grit-Heavy	11426B
	35.6 cm	Grit-Medium	11431B
	35.6 cm	Grit-Lite	10383A
	35.6 cm	Soft Nylon	10874A
	48.3 cm	Poly	11434B
	48.3 cm	Grit-Heavy	11433B
	48.3 cm	Grit-Medium	11432B
	48.3 cm	Grit-Lite	10385A
	48.3 cm	Soft Nylon	11435B

Pad Drivers:	Size	Part No.
	48.3 cm	17524B
	43.2 cm	17520C
	35.6 cm	17521C

Nilfisk ALTO

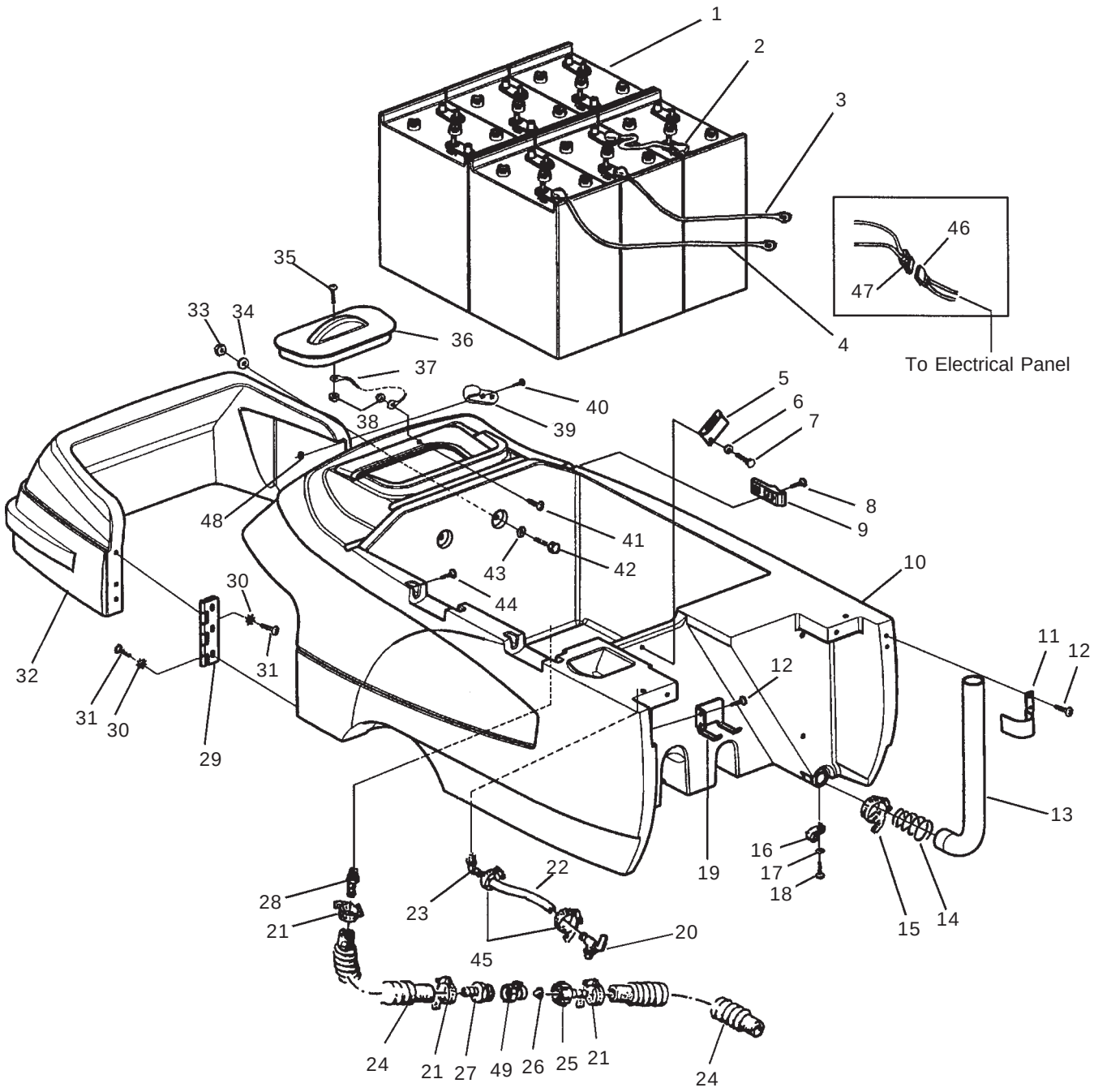
SCRUBTEC 770 S
SCRUBTEC 770 L
SCRUBTEC 784 S
SCRUBTEC 784 L
SCRUBTEC 795 S
SCRUBTEC 795 L

Section II
Parts and Service Manual

(70935A)

U.S. Patent No. 6,760,947; No. 6,105,192; No. RE39, 581 (Deluxe Machines)

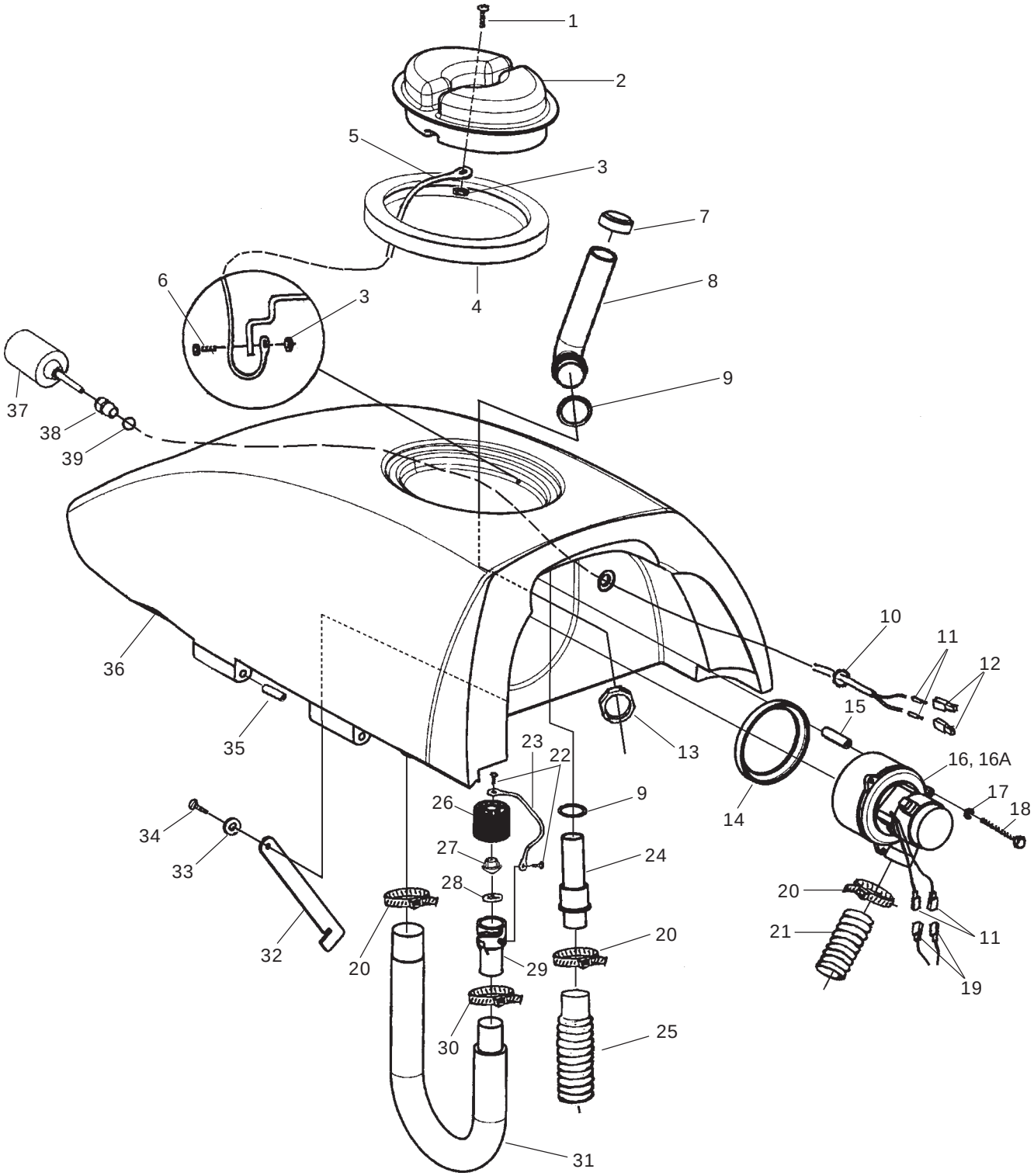
Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Solution Tank Assembly Drawing 11/06



Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Solution Tank Assembly Parts List 11/06

Ref #	Part No.	Description	Qty
1	881317	Battery - 250 AH - 6 Volt	6
	891384	Battery - 330 AH - 6 Volt	6
2	842406	Series Cable - 9" ("S" Models)	5
	842406	Series Cable - 9" ("L" Models)	4
	40860A	Fused Cable ("L" Models)	1
3	40613A	Battery Cable, Black ("L" Models)	1
4	40612A	Battery Cable, Red ("L" Models)	1
5	61713A	Tank Support Bracket	1
6	170892	Washer, Lock 1/4	2
7	170915	Screw, 1/4-20 x 3/4 Hex	2
8	962027	Screw, 8-32 x 1/2 PN	2
9	50966A	Latch	1
10	30590E	Solution Tank	1
11	60480A	Hose Bracket	1
12	80108A	Screw, 10-24 x 1/2 PN	4
13	30598A	Drain Hose	1
14	51346A	Spring, Hose	1
15	872010	Hose Clamp	1
16	98465A	Clamp, Metal	1
17	980657	Washer, Lock 1/4	1
18	962139	Screw, 1/4-20 x 5/8 Hex	1
19	61590A	Hose Hanger Bracket	1
20	59614A	Battery Drain Valve	1
21	53571A	Hose Clamp	4
22	30453A	Hose	1
23	822802	Elbow	1
24	30445A	Solution Hose	2
25	50358A	Connector	1
26	838517	Filter Screen	1
27	830214	Hose Adapter	1
28	50359A	Solution Adapter	1
29	53568A	Hinge	1
30	980614	Washer, 1/4 External	6
31	85395A	Screw, 1/4-20 x 1/2 PN	6
32	30655A	Front Cover	1
33	81105A	Nut, 3/8-16 ESNA	2
34	980645	Washer, 3/8 Flat	2
35	962798	Screw, 10-24 x 1/2 PN	1
36	30498A	Solution Lid	1
37	38020A	Strap	1
38	920296	Nut, 10-24 ESNA	2
39	50966A	Keeper, Latch	1
40	930090	Rivet, 5/32 x 9.16 (Prior to DL0055)	2
40	85614A	Screw, 8-32 x 3/4 PN (starting w/DL0055)	2
41	962666	Screw, 10-24 x 3/4 PN	1
42	962522	Screw, 3/8-16 x 2 Hex	2
43	87054A	Washer, 3/8 Fender	2
44	80289A	Screw, 10 x 1/2 Tapping PN	2
45	50248A	Clamp, Hose	2
46	40856A	Cable, Electrical Panel ("S" Models)	1
	40857A	Cable, Battery Charger ("L" Models)	1
47	40855A	Cable, Battery ("S" Models)	1
48	81109A*	Nut, 8-32 SS Elastic Lock	2
49	54088A	Valve, Shut-Off	1

Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Recovery Tank Assembly Drawing 6/07

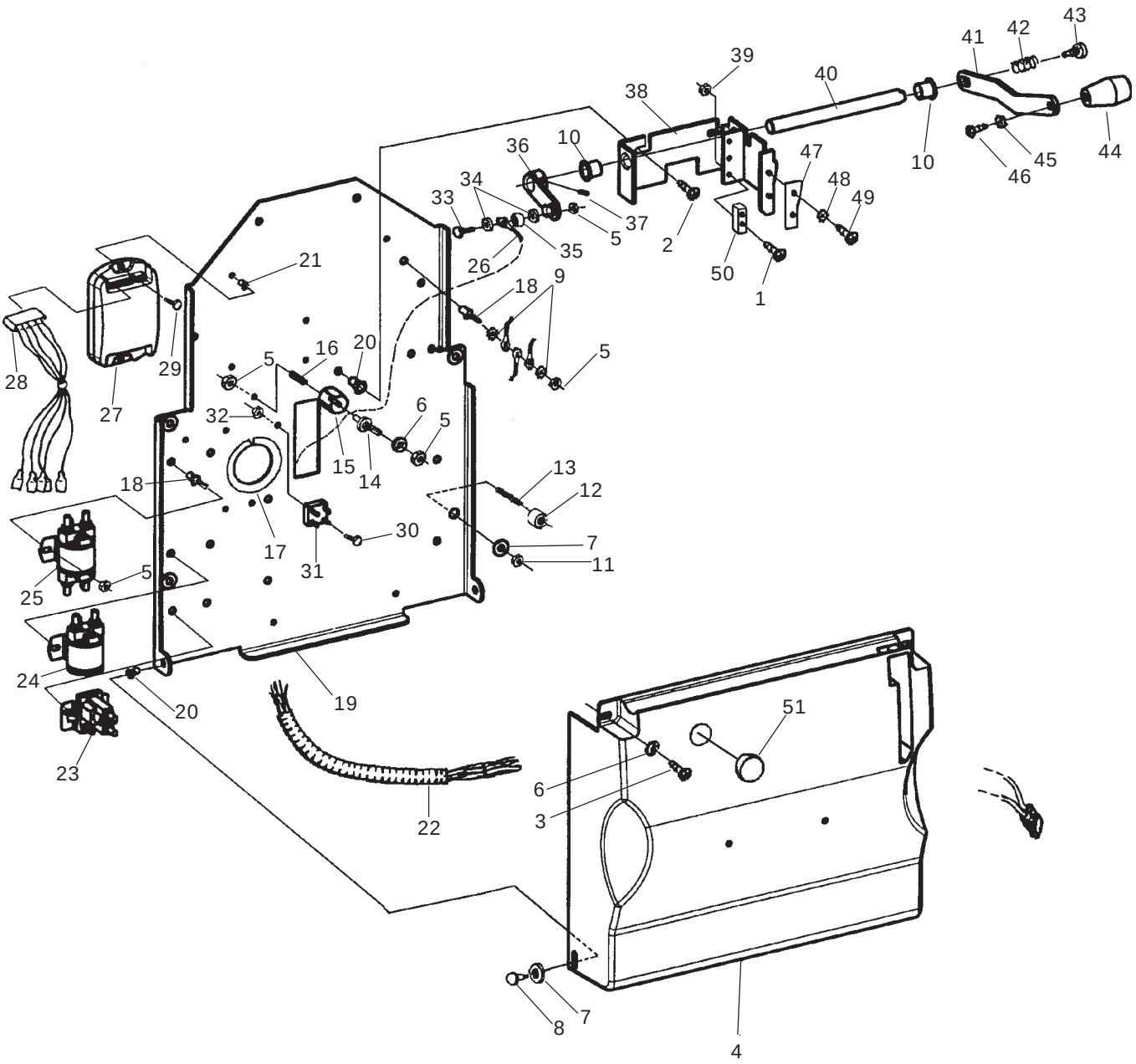


Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Recovery Tank Assembly Parts List 11/07

Ref #	Part No.	Description	Qty
1	962798	Screw, 10-24 x 1/2 PN	1
2	30057A	Recovery Lid	1
3	920296	Nut, 10-24 ESNA	2
4◆	30065B	Gasket, Lid	1
5	38020A	Strap	1
6	962666	Screw, 10-24 x 3/4 PN	1
7	58069A	Vac Filter	1
8	39338B	Stand Tube	1
9	837304	O-Ring	2
10	82100A	Locknut	1
11	41809A	Contact	4
12	43402A	Housing, Blue	2
13	920797	Nut	1
14	643418	Gasket, Vac	1
15	58533A	Vac Motor Spacer	3
16	45019A	Vac Motor (order 2 each #11 and #19)	1
16A	40830A	Brushes, Carbon	2
17	87026A	Washer, 1/4 Flat	3
18	85728A	Screw, 1/4-20 x 4 Hex	3
19	43401A	Housing, Black	2
20	872010	Clamp	3
21	674110	Vac Exhaust Hose	1
22	962957	Screw, 10-16 x 1/2 PN	2
23	52206A	Chain	1
24	30620A	Squeegee Adapter	1
25	35192A	Squeegee Hose	1
26	30227A	Drain Housing	1
27	30226A	Drain Plug	1
28	52560A	O-Ring	1
29	30225A	Drain Body	1
30	832002	Drain Valve Clamp	1
31	35165A	Recovery Drain Hose	1
32	61591A	Recovery Tank Support	1
33	87622A	Washer, Nylon	1
34	80043A	Shoulder Screw	1
35	30068A	Hinge Pin (included with item #36)	2
36	30673A	Tank, Recovery, 770 S	1
	30697A	Tank, Recovery, 770 L	1
	30698A	Tank, Recovery, 784 S	1
	30699A	Tank, Recovery, 784 L	1
	30700A	Tank, Recovery, 795 S	1
	30701A	Tank, Recovery, 795 L	1
37	40002A	Float Switch (includes items, #38 & 2 ea. #11& #12)	1
38	56459A	Strain Relief (included in item #37)	1
39	87612A	Seal	1

NOTE: ◆ indicates a change has been made since the last publication of this manual.

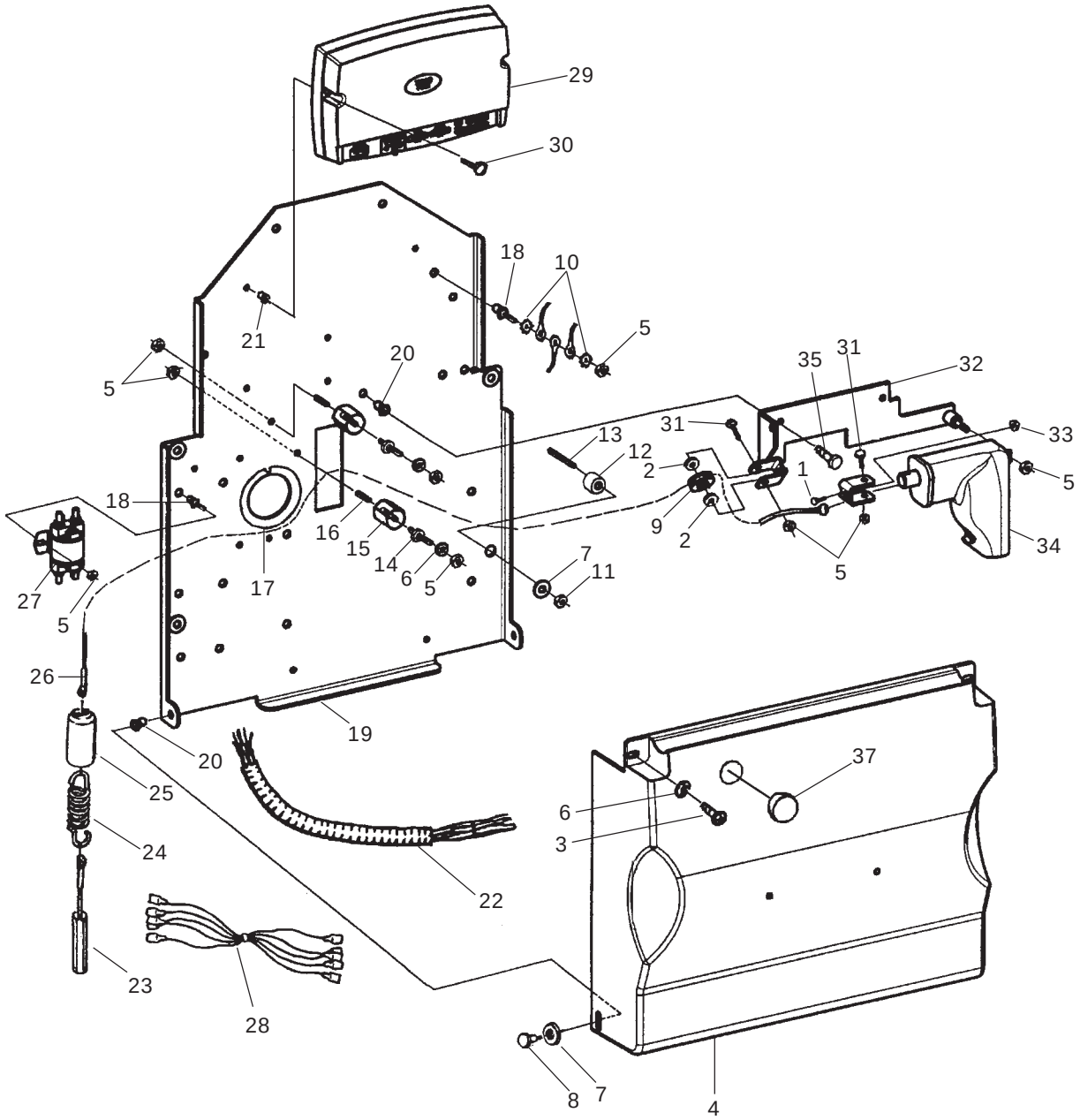
Nilfisk ALTO
SCRUBTEC 770 S / 784 S / 795 S
Electrical Panel Assembly Drawing 2/07
Drawing # 10849E



Nilfisk ALTO
SCRUBTEC 770 S / 784 S / 795 S
Electrical Panel Assembly Parts List 2/07
Drawing # 10849E

Ref #	Part No.	Description	Qty
1	962980	Screw, 6-32 x 1	2
2	962139	Screw, 1/4-20 x 5/8	2
3	85391A	Screw, 1/4-20 x 5/8 PN	2
4	30594A	Rear Cover	1
5	81104A	Nut, ESNA 1/4-20	10
6	87007A	Washer, 1/4 Flat	3
7	980651	Washer, 5/16 Flat	6
8	80030A	Shoulder Bolt	2
9	980614	Washer, 1/4 External	2
10	902731	Nylon Bearing	2
11	920110	Nut, ESNA 5/16-18	4
12	53569A	Spacer	4
13	80285A	Screw, Set 5/16-18 x 1 3/4	4
14	83302A	Stud, 1/4-20	1
15	854849	Insulator	1
16	170781	Screw, Set 1/4-20 x 3/4	1
17	193951	Trim, 8"	1
18	83307A	Stud, 1/4-20	11
19	61589A	Electrical Panel	1
20	54764A	Insert, 1/4-20	4
21	54763A	Insert, 8-32	2
22	40736A	Main Wiring Harness, Std.	1
23	40125A	Contactor, Vacuum	1
24	41801A	Contactor, Brush	1
25	41802A	Contactor, Main	1
26	61682A	Cable, Upper	1
27	40735A	Controller, Solo	1
28	40759A	Traverse Harness	1
29	80254A	Screw, 8-32 x 1	2
30	962666	Screw, 10-24 x 3/4	1
31	912287	Rectifier	1
32	920296	Nut, ESNA 10-24	1
33	85700A	Screw, 1/4-20 x 1	1
34	87026A	Washer, 1/4 Flat	2
35	608210	Spacer	1
36	65628A	Lever, Cable	1
37	962304	Screw, Set 5/16-18 x 1/2 (must use red Loctite)	2
38	61584A	Squeegee Lift Bracket	1
39	920056	Nut, ESNA #6-32	2
40	61586A	Shaft	1
41	61585A	Squeegee Lift Lever	1
42	438360	Spring	1
43	960510	Shoulder Screw	1
44	52557A	Squeegee Knob	1
45	980666	Washer, 3/8 External	1
46	85389A	Screw, 3/8-16 x 5/8	1
47	68643A	Wear Plate	1
48	980675	Washer	2
49	962546	Screw, 10-24 x 1/2	2
50	47388A	Switch	1
51	54436A	Plug, Hole 1 3/8"	1

Nilfisk ALTO
SCRUBTEC 770 L / 784 L / 795 L
Electrical Panel Assembly Drawing 2/07
Drawing # 10855E



Nilfisk ALTO
SCRUBTEC 770 L / 784 L / 795 L
Electrical Panel Assembly Parts List 2/07
Drawing # 10855E

Ref #	Part No.	Description	Qty
1	962798	Screw	1
2	87624A	Washer, Pulley	2
3	85391A	Screw, 1/4-20 x 5/8 PN	2
4	30626A	Rear Cover	1
5	81104A	Nut, ESNA 1/4-20	10
6	87007A	Washer, 1/4 Flat	4
7	980651	Washer, 5/16 Flat	6
8	80030A	Shoulder Bolt	2
9	57275A	Pulley	1
10	980614	Washer, 1/4 External Lk	2
11	920110	Nut, ESNA 5/16-18	4
12	53569A	Spacer	4
13	80285A	Screw, Set 5/16-18 x 1 3/4	4
14	83302A	Stud, 1/4-20	2
15	854849	Insulator	2
16	170781	Screw, Set 1/4-20 x 3/4	2
17	193951	Trim, 8"	1
18	83307A	Stud, 1/4-20	3
19	61589A	Electrical Panel	1
20	54764A	Insert, 1/4-20	2
21	54763A	Insert, 8-32	2
22	40742A	Main Wiring Harness, Dlx	1
23	61680A	Cable, Spring	1
24	53424A	Spring, Cable	1
25	58409A	Sleeve, Spring	1
26	61681A	Cable, Upper	1
27	41802A	Contactor	1
28	40854A	Harness, Interface	1
29	40743B	Controller, Trio	1
30	80105A	Screw, 8-32 x 1 1/4	2
31	86004A	Screw, 1/4-20 x 1 1/2	2
32	61595A	Bracket, Actuator	1
33	920296	Nut	1
34	40745A	Actuator, Squeegee	1
35	962139	Screw, 1/4-20 x 5/8 Hex	2
36	69872A	Bracket, Pulley	1
37	54436A	Plug, Hole 1 3/8"	1

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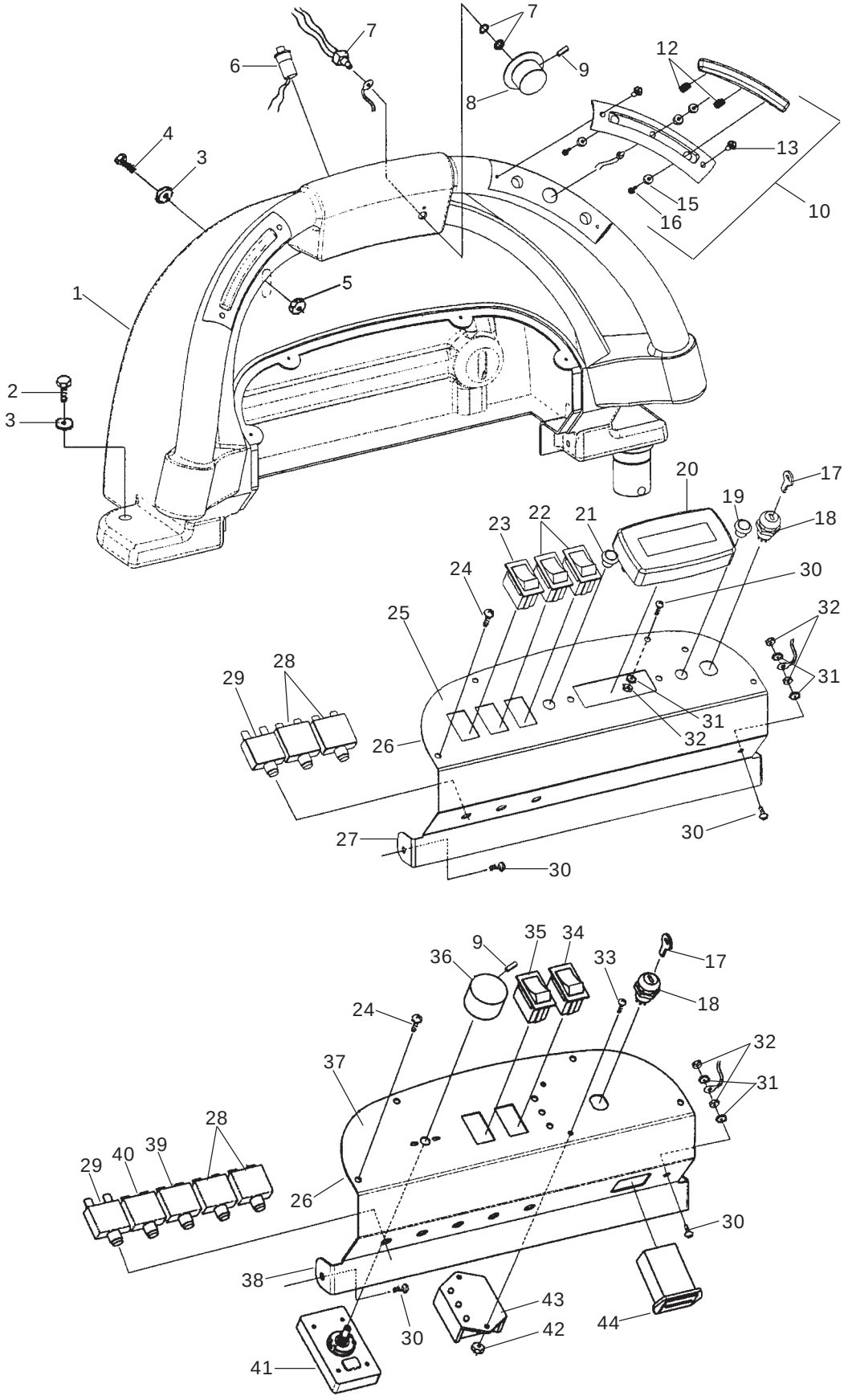
SCRUBTEC 770 / 784 / 795

Control Panel Assembly Drawing 11/07



Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Control Panel Assembly Parts List 11/07

Ref. #	Part No.	Description	Qty "L"	Qty "S"
1	30592A	Control Handle	1	1
2	85815A	Screw, 5/16-18 x 1 1/2	2	2
3	980205	Washer, 5/16 Flat	6	6
4	85813A	Screw, 5/16-18 X 1	4	4
5	920110	Nut, LK 5/16-18	4	4
6	52556A	Reverse Switch	1	1
7	40750A	Traverse Potentiometer "L"	1	-
	40738A	Traverse Potentiometer "S"	-	1
8	50962A	Knob, Traverse	1	1
9	962262	Screw, Set 8-32 x 1/2 (included w/# 8 & 36)	2	4
10◆	11131A	Switch Assembly	2	2
12	50961A	Spring, Switch	4	4
13	80104A	Screw, 10-32 x 1/2 Oval	4	4
15	980608	Washer, #6 Flat	4	4
16	962330	Screw, 6-32 x 3/8 Pan	4	4
17	40786K	Key (included w/ # 18)	1	1
18	40786A	Switch, Key	1	
NI	40786S	Spacer, Key Switch	1	
19	40748A	Switch, Green Push Button	1	-
20	40880A	LCD Display	1	-
21	40758A	Switch, Black Push Button	1	-
22	40168B	Switch, Momentary Rocker	2	-
23	40747A	Switch, 3 Position Rocker	1	-
24	962957	Screw, 10-16 x 1/2	4	4
25	70962A	Label, Control	1	-
26	34264A	Gasket	1	1
27	61739A	Panel, Control "L"	1	-
28	41431B	Circuit Breaker, 35A	2	2
29	41423B	Circuit Breaker, 5A	1	1
30	85391A	Screw, 1/4-20 x 5/8	4	3
31	980614	Washer, 1/4 External	3	2
32	920208	Nut, 1/4-20	3	2
33	962968	Screw, 10-24 x 1/2	-	2
34	40749A	Switch, Momentary Rocker	-	1
35	47381B	Switch, Mantain Rocker	-	1
36	55502A	Knob, Control	-	1
37	70961A	Label, Control	-	1
38	61720A	Panel, Control	-	1
39	41448B	Circuit, Breaker, 30A	-	1
40	41422B	Circuit, Breaker, 25A	-	1
41	44308B	Solution Modulator	-	1
42	920296	Nut, Lk 10-24	-	2
43	40898A	Meter, Battery/Charger	-	1
44	912226	Meter, Hour	-	1

NOTE: ◆ indicates a change has been made since the last publication of this manual.

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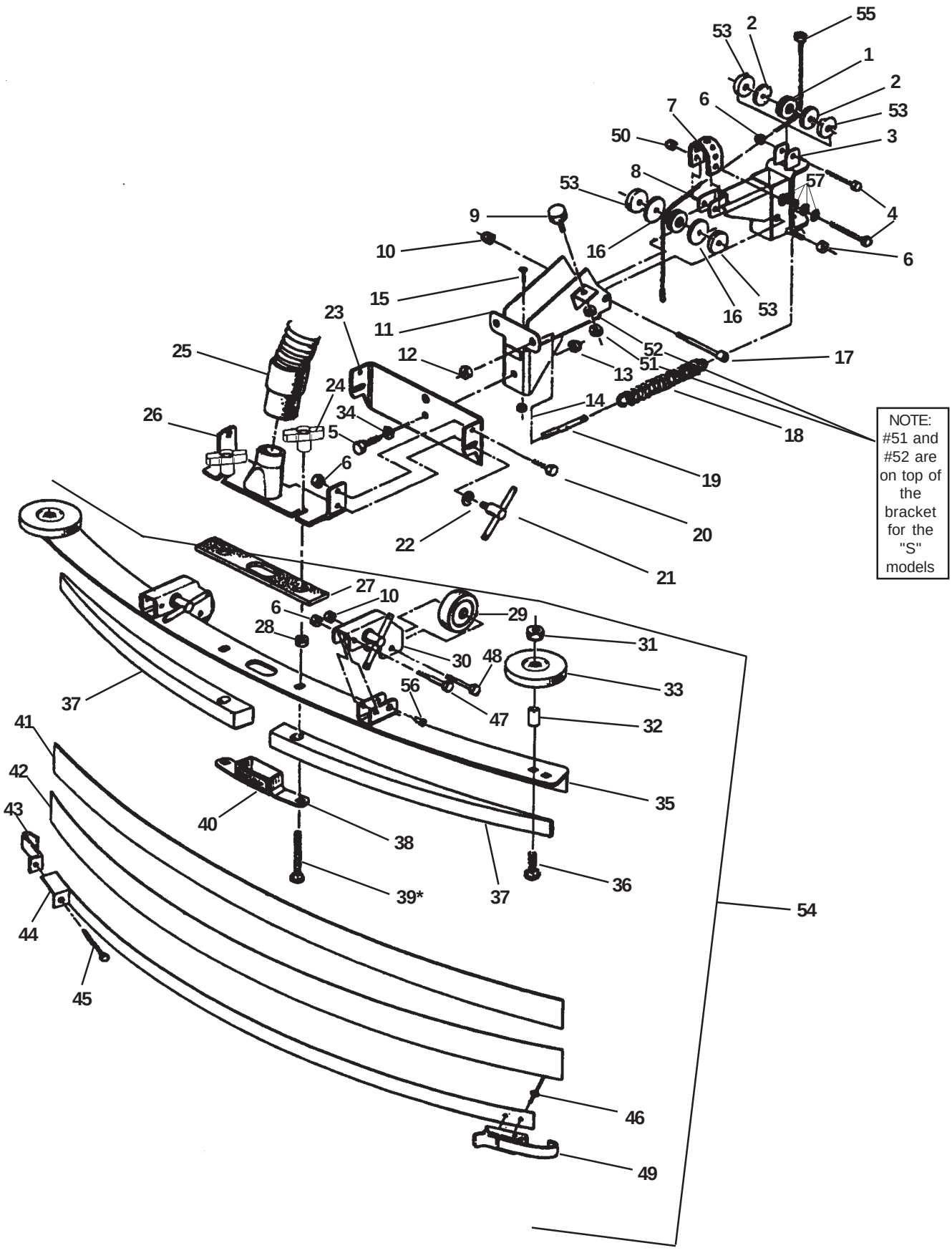
SCRUBTEC 770 / 784 / 795

Squeegee Swing Arm Assembly Drawing 11/07



NOTE: #51 and #52 are on top of the bracket for the "S" models

Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Squeegee Swing Arm Assembly Parts List 11/07

Ref #	Part No.	Description	Qty	Model
1	57275A	Pulley	2	All
2	87623A	Washer, Nylon 1¼x¼x1/8	2	All
3	60452A	Swing Arm, Front	1	All
4	86004A	Screw, .25-20 x 1½	2	All
5	85730A	Screw, .375-16 x 1¼	1	All
6	81104A	Nut, Hex ESNA SS	6	All
7	38021A	Strap	1	All
8	61679A	Cable, Lower	1	All
9	51613A	Bumper	1	All
10	920110	Nut, ESNA	3	All
11	60332A	Swing Arm, Rear	1	All
12	920256	Nut, Hex	2	All
13	81105A	Nut, ESNA SS	1	All
14	920296	Nut, 10-24 ESNA SS	1	All
15	962798	Screw, 10-24 x .50	1	All
16	87624A	Washer, Nylon 1½x¼x1/8	2	All
17	80015A	Screw, Shoulder	1	All
18	53423A	Spring, Squ. Pressure	2	All
19	68016A	Stud	2	All
20	170915	Screw, SS Hex	2	All
21	64905A	T Handle	3	All
22	980651	Washer, Flat .312	1	All
23	60678C	Pivot Bracket	1	All
24◆	25201B	Knob	2	All
25	35192A	Hose, Squeegee Rec.	1	All
26	61267A	Tube Bracket	1	All
27	34260B	Squeegee Gasket	1	All
28	81301A	Nut, Jam SS	2	All
29	59971A	Wheel	2	All
30	65975A	Wheel Mount Bracket	2	All
31	81217A	Nut, 1/4-20 ESNA	2	All
32	60248A	Sleeve	2	All
33	30048A	Guide Wheel	2	All
34	87031A	Washer, 3/8 Flat	1	All

NOTE: When changing squeegee blades, it might be necessary to loosen screw #39; install and secure blades with clamp #44; then retighten screw #39. This will allow for different thickness.

+ = Optional parts for non-standard, adjustable squeegee assemblies on Scrubtec 770/784. See next page for standard squeegee assemblies.

NOTE: ◆ indicates a change has been made since the last publication of this manual.

Ref #	Part No.	Description	Qty	Model
35	69673A	Squeegee Base	1	770+
	69674A	Squeegee Base	1	784+
	69675A	Squeegee Base	1	795
	69636A	Squeegee Base, 29" acc.	1	770+
36	80316A	Screw, ¼-20 x 1 Flat SS	2	All
37	38710A	Spacer	2	770+
	38711A	Spacer	2	784+
	38715A	Spacer	2	795
	38713A	Spacer, 29" accessory	2	770+
38	62712A	Air Duct	1	All
39	80011A	Screw, .375-16 x 3.00	2	All
40	37016A	Grip Pad	1	All
41*	30716L1	Blade, Inner Linatex	1	770+
	30717L2	Blade, Inner Linatex	1	784+
	30718L2	Blade, Inner Linatex	1	795
	30763L1	Blade, Inner 29" Linatex	1	770+
42*	30912L	Blade, Outer Linatex	1	770+
	30913L	Blade, Outer Linatex	1	784+
	30935L	Blade, Outer Linatex	1	795
	30931L	Bade, Outer 29" Linatex	1	770+
43	62421A	End Clamp	1	All
44	62442A	Clamp, Weld	1	770+
	62443A	Clamp, Weld	1	784+
	62444A	Clamp, Weld	1	795
	62441A	Clamp, Weld 29" acc.	1	770+
45	86004A	Screw, .25-20 x 1.50 Hex	1	All
46	170932	Rivet	2	All
47	85702A	Screw, .25-20 x 1.75	2	All
48	85816A	Screw, .312-18 x 1.75	2	All
49	55722A	Squeegee Strap Latch	1	All
50	81217A	Nut, ½-20	1	All
51	920208	Nut, Hex ¼-20	1	All
52	980657	Washer, ¼ Lock	1	All
53	87625A	Washer,Nylon 1¼x¼x1/32	4	All
54	18815KL	Asm., Squeegee	1	770+
	18816KL	Asm., Squeegee	1	784+
	18817KL	Asm., Squeegee	1	795
	18818L	Asm., Squeegee*	1	770+
55	81303A	Nut, ¼-28	1	All
56	54766A	Insert,Threaded 5/16-24	2	All
57	87026A	Washer	4	All

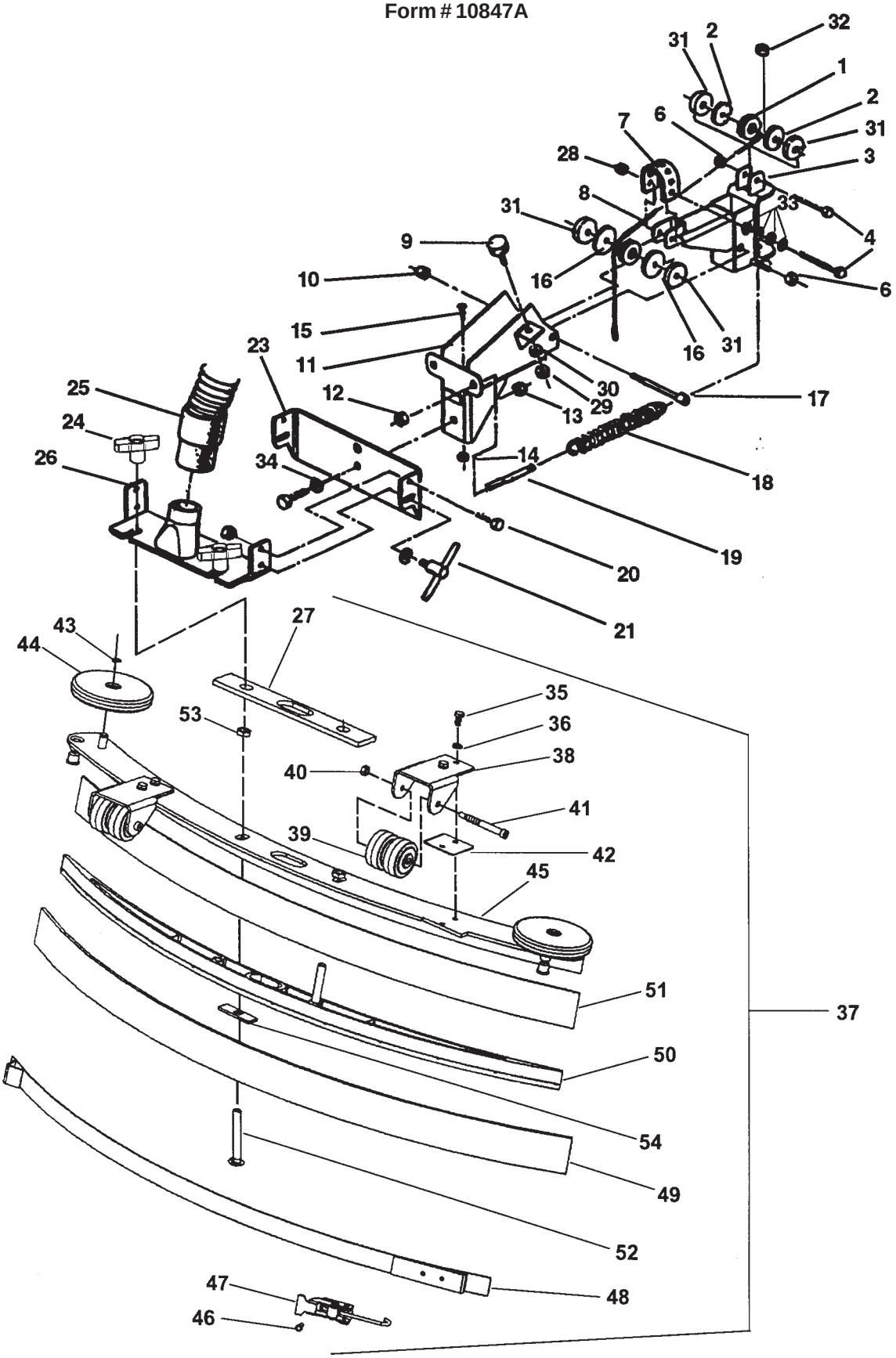
*** See accessory page**

Nilfisk ALTO

SCRUBTEC 770 / 784

Standard Squeegee Swing Arm Assembly Drawing 11/07

Form # 10847A



Nilfisk ALTO
SCRUBTEC 770 / 784
Standard Squeegee Swing Arm Assembly Parts List 11/07
Form # 10847A

Ref #	Part No.	Description	Qty
1	57275A	Pulley	2
2	87623A	Washer, Nylon 1¼x¼x1/8	2
3	60452A	Swing Arm, Front	1
4	86004A	Screw, .25-20 x 1½	2
5	85730A	Screw, .375-16 x 1¼	1
6	81104A	Nut, Hex ESNA SS	4
7	38021A	Strap	1
8	61679A	Cable, Lower	1
9	51613A	Bumper	1
10	920110	Nut, ESNA	1
11	60332A	Swing Arm, Rear	1
12	920256	Nut, Hex	2
13	81105A	Nut, ESNA SS	1
14	920296	Nut, 10-24 ESNA SS	1
15	962798	Screw, 10-24 x .50	1
16	87624A	Washer, Nylon 1½x¼x1/8	2
17	80015A	Screw, Shoulder	1
18	53423A	Spring, Squ. Pressure	2
19	68016A	Stud	2
20	170915	Screw, SS Hex	2
21	64905A	T Handle	3
22	980651	Washer, Flat .312	1
23	60678C	Pivot Bracket	1
24◆	25201B	Knob	2
25	35192A	Hose, Squeegee Rec.	1
26	61267A	Tube Bracket	1
27	34260B	Squeegee Gasket	1

Ref #	Part No.	Description	Qty
28	81217A	Nut, ½-20	1
29	920208	Nut, Hex ¼-20	1
30	980657	Washer, ¼ Lock	1
31	87625A	Washer,Nylon 1¼x¼x1/32	4
32	81303A	Nut, ¼-28	1
33	87026A	Washer	4
34	87031A	Washer, 3/8 Flat	1
35	962720	Screw, ¼ -20 x ½ Hex	4
36	980657	Washer, ¼ Lock	4
37	10803KL	Squeegee Asm.	N/A
38	60243A	Bracket, Sq. Wheel	2
39	30049B	Wheel, Squeegee	4
40	81104A	Nut, ¼ -20	2
41	60254A	Bolt, Shoulder 5/16 x 2 ¼	2
42	60358A	Shim, Squeegee Wheel	2
43	53185A	Ring, 3/8 ID Snap	2
44	30048A	Wheel, Gide 4" Diam.	2
45	60272B	Channel, Sq. Weldment	1
46	930086	Rivet, 3/16 x .450 Alum.	2
47	50835A	Latch, Sq. Clamp	1
48	60252A	Strap, Clamp Sq. Ret.	1
49	30557L	Blade, Rear Linatex	1
50	30058A	Spacer, Squeegee	1
51	30717L1	Blade, Front Linatex	1
52	80011A	Screw, 3/8-16 x 3	2
53	81301A	Nut, 3/8-16 Jam SS	2
54	80280A	Nut, Squeegee,Backup	2

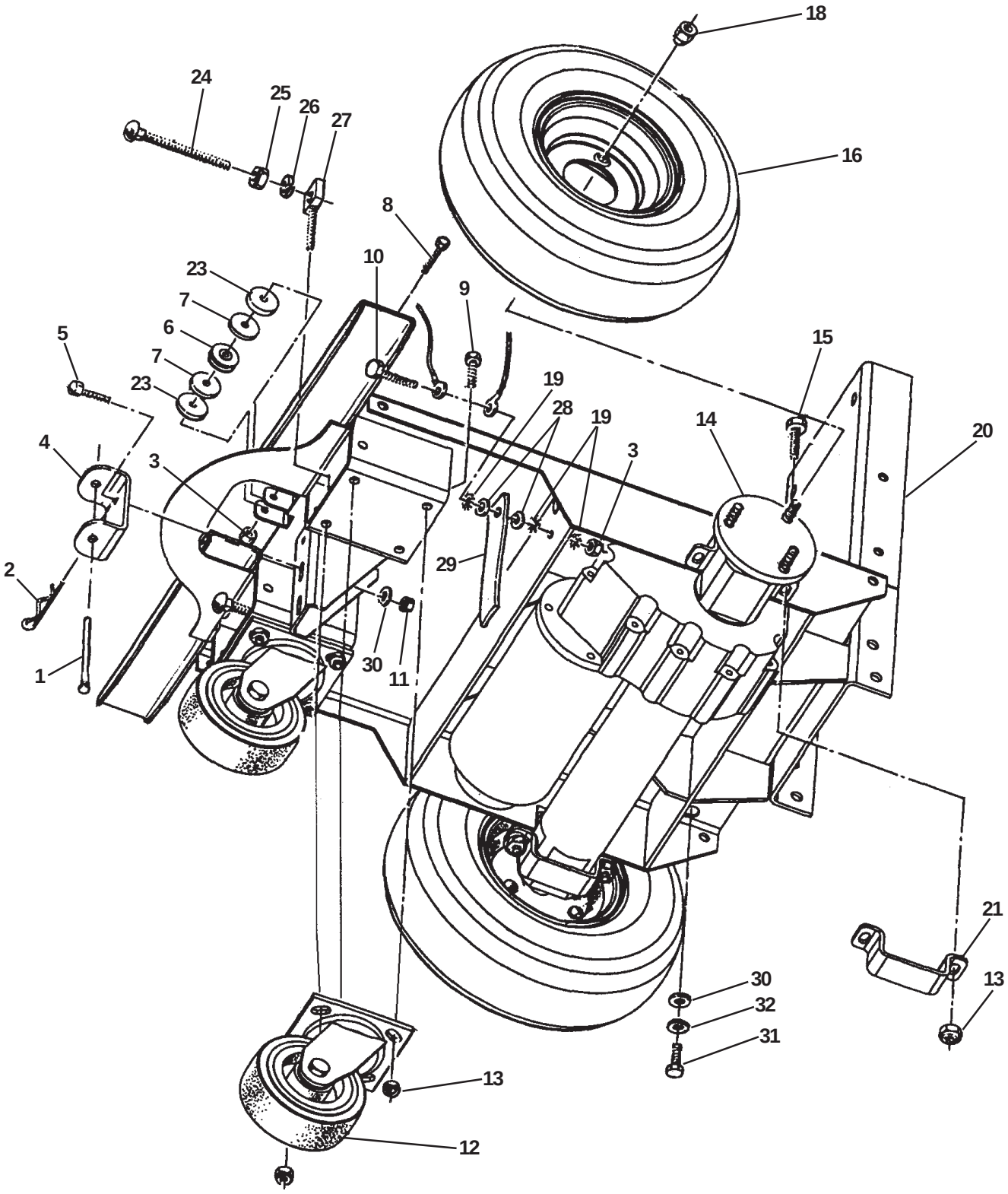
NOTE: When changing squeegee blades, it might be necessary to loosen screw #52; install and secure blades with clamp #47; then retighten screw #52. This will allow for different thickness.

NOTE: ◆ indicates a change has been made since the last publication of this manual.

Nilfisk ALTO

SCRUBTEC 770 / 784 / 795

Traverse System Assembly Drawing 2/05



Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Traverse System Assembly Parts List 2/05

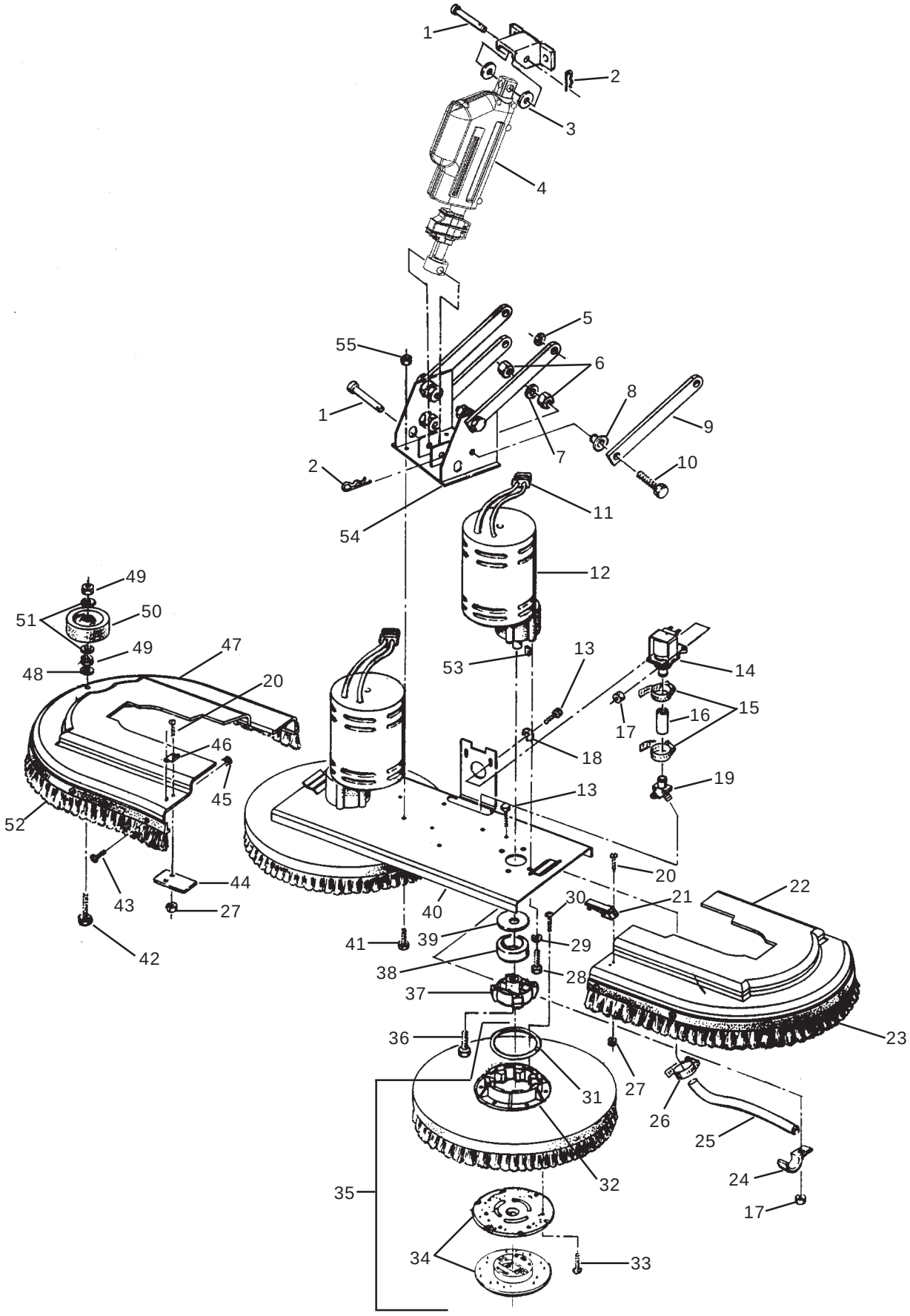
Ref #	Part No.	Description	Qty	Model
1	66531A	Swing Arm Pin	1	All
2	836711	Hair Pin	1	All
3	81104A	Nut, .25-20 ESNA	2	All
4	69877A	Swing Bracket	1	All
5	85811A	Screw, .312-18 x .75	2	All
6	57275A	Cable Pulley	1	All
7	87623A	Washer, Nylon 1¼x¼IDx.120	2	All
8	86004A	Screw, .25-20 x 1.50	1	All
9	962288	Screw, .375-16 x 1	6	All
10	85700A	Screw, .25-20 x 1	1	All
11	920110	Nut, .312-16 ESNA	2	All
12	899769	Caster Assembly	2	All
13	81105A	Nut, .375-16 ESNA	12	All
14	59116E	Transaxle, Imperial (see page 51 for parts)	1	All
15	85730A	Screw, Hex	4	All
16	59969A	Wheel Assembly*	2	All
	59955A	Wheel, Foam Filled (opt.)	2	All
18	81221A	Lug Nut, 50-20 UNF	6	All
19	980614	Washer, Star Lock .25	3	All
20	61594A	Main Frame	1	All
21	65963A	Transaxle Mount	2	All
23	87625A	Washer, Nylon 1¼x¼IDx3/32	2	All
24	80011A	Screw, 3/8-16 x 3	2	All
25	81207A	Nut, 3/8-16	2	All
26	170883	Washer, Lock 3/8	2	All
27	58419A	Stud, 3/8M x 3/8F	2	All
28	980205	Washer, .25 Fender	2	All
29	69639A	Strap, Static	1	All
30	980645	Washer, Flat 3/8	6	All
31	962244	Screw, 3/8-16 x ¾	4	All
32	980638	Lockwasher 3/8	4	All
NI	32417B	Wheel Cover	2	All

*30039A tube, inner (included in item #16) 1 Ref.

Nilfisk ALTO

SCRUBTEC 770 / 784 / 795

Brush Head Assembly Drawing 2/05



Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Brush Head Assembly Parts List 11/07

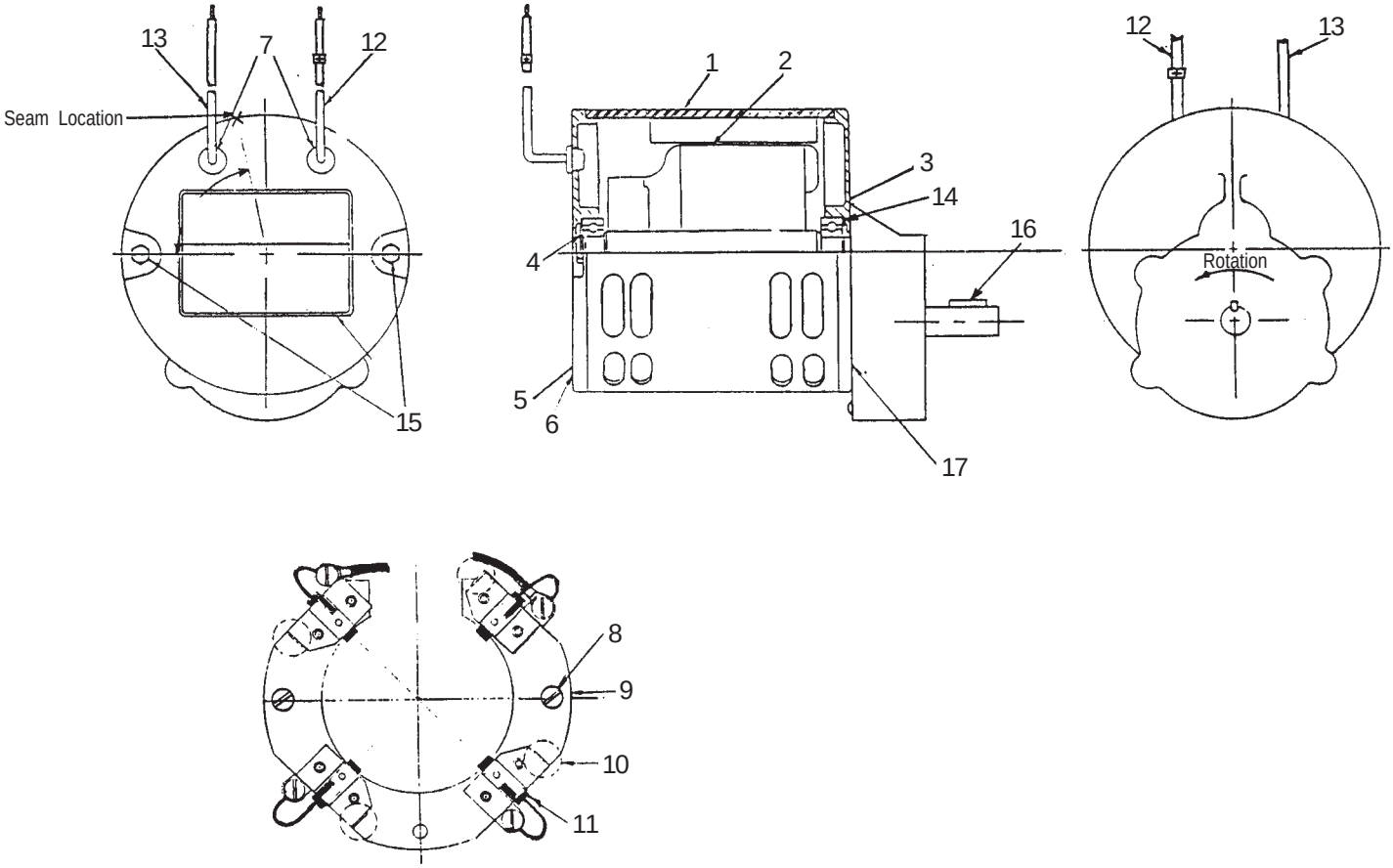
Ref #	Part No.	Description	Qty	Model
1	82501A	Pin	2	All
2	766780	Hair Pin	2	All
3	38723A	Nylon Spacer	2	All
4	52497A	Actuator & Tube Asm.	1	S series
	52499A	Actuator & Tube Asm.	1	L series
4A	40910A	Potentiometer (Circuit Board)	1	All
	40866A	Housing, Potentiometer	1	All
5*	980673	Washer	4	All
6	920278	Nut, Jam 50-20	16	All
7	980626	Washer, Lock .50	8	All
8	67705B	Sleeve Bearing	8	All
9	63032A	Linkage Bar	4	All
10	85838A	Screw, .50-201.50	8	All
11	41601A	Connector	4	All
	40645A	Housing	4	All
12***	45036B	Brush Motor 1.00 HP	2	All
13	170915	Screw, Hex	4	All
14	48703A	Electric Valve	1	All
15	50248A	Hose Clamp	2	All
16	30455A	Hose	1	All
17	81104A	Nut, .25-20 ESNA	5	All
18	87007A	Washer, Flat .25	2	All
19	38014A	Solution Splitter	1	All
20	962992	Screw, 8-32x.62 SS	4	All
21	55721A	Latch	1	All
22	30574A	Left Brush Housing	1	28
	30583A	Left Brush Housing	1	33
	30355A	Left Brush Housing	1	38
23	38246A	Left Skirt	1	38
24	782002	Clamp	2	All
25	30453A	Brush Hose	2	All
26	722021	Hose Clamp	2	All
27	81109A	Nut, 8-32 ESNA SS	4	All
28	962244	Screw, .375-16x.75	8	All
29	980638	Washer, Lock .375	8	All
30	962495	Screw, .25-20x1.00Pn Hd	6	All
31	838301	Brush Holder Spring	2	All
32	833802	Gimbal, Female	2	All
33	962737	Screw, 10-16x.88 (Pad Driver Only)	6	All

Ref #	Part No.	Description	Qty	Model
34	56941A	Center-Lock Asm. (Pad Driver Only)	2	All
35	11427B	Poly Brush Assembly-14	2	28
	11424B	Poly Brush Assembly-17	2	33
	11434B	Poly Brush Assembly-19	2	38
	11426B	Grit Brush Assembly-14	2	28
	11425B	Grit Brush Assembly-17	2	33
	11433B	Grit Brush Assembly-19	2	38
	17521C	Pad Driver Assembly-14	2	28
	17520C	Pad Driver Assembly-17	2	33
	17524B	Pad Driver Assembly-19	2	38
36	962714	Screw,.312-18x.75 Soc.	2	All
37	34400B	Gimbal, Male	2	All
38	61658A	Gimbal Collar	2	All
39	59856A	Rubber Washer	2	All
40	66232A	Brush Plate-28	1	28
	61587A	Brush Plate-33	1	33
	66234A	Brush Plate-38	1	38
41	85811A	Screw, .312-18x.75 Hex	4	All
42	85610A	Screw, .375-16x2.5 SS Pn	1	All
43	85616A	Screw, 10-22x.62 Pn SS	11	38
44	69186A	Latch Tab	1	All
45	82004A	"T" Nut 10-32	12	38
46	55451A	Keeper	1	All
47	30575A	Right Brush Housing	1	28
	30584A	Right Brush Housing	1	33
	30247A	Right Brush Housing	1	38
48	980638	Lockwasher	1	All
49	920248	Nut, .375-16 Jam Thin ESNA	2	All
50	59950A	Guide Wheel	1	All
51	980645	Washer, Flat .375	2	All
52	38247A	Right Skirt	1	38
53	915102	Key	2	All
54	65966A	Brush Head Mount	1	All
55	920110	Nut, .312-18 ESNA	6	All
NI◆	40910A	Potentiometer, Cir. Board (for part # 52499A)	1	L Series
NI◆	40866A	Housing, Potentiometer (for part # 52499A)	1	L Series
**NI	77091A	Label, Moving Parts	2	All

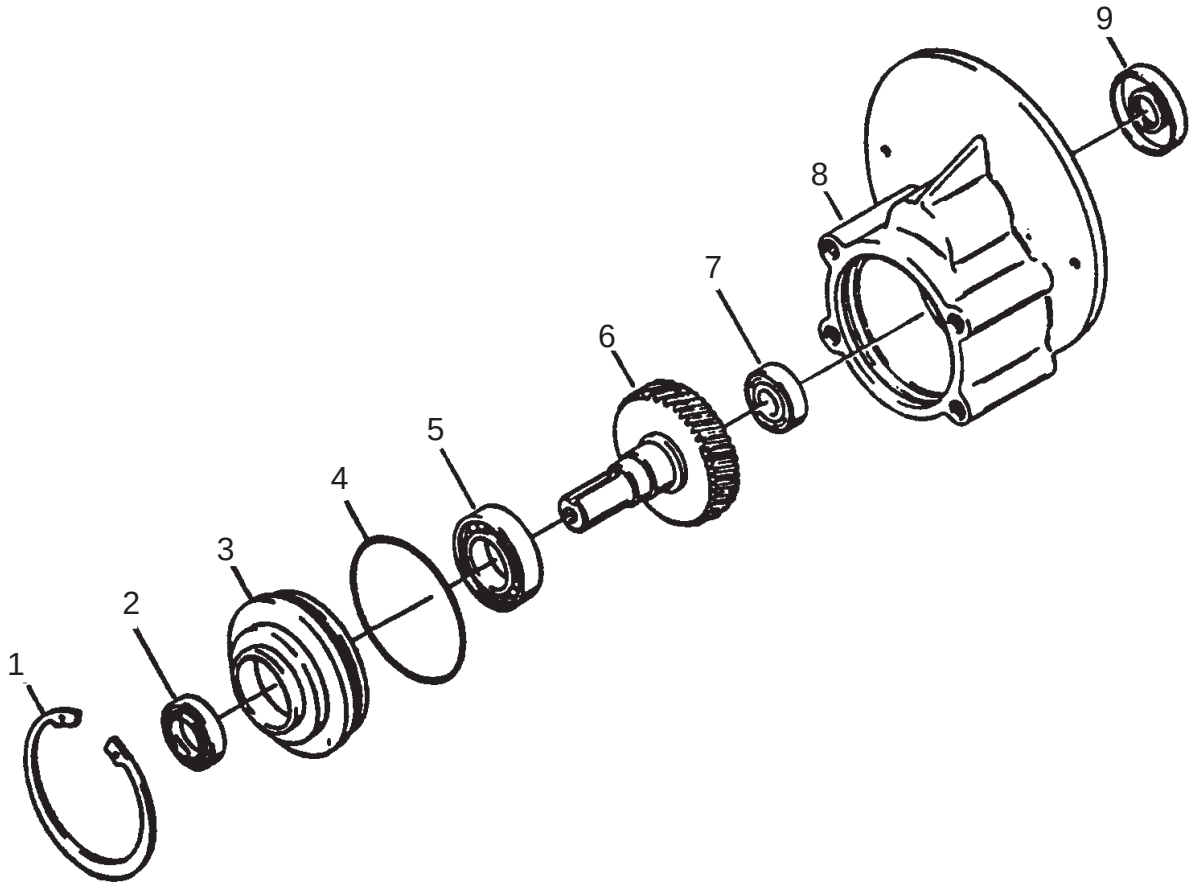
*Used only as required to square up linkage bars #9 to the frame.
**Attach to Brush Motor.
***Includes Item #11

NOTE: ◆ indicates a change has been made since the last publication of this manual.

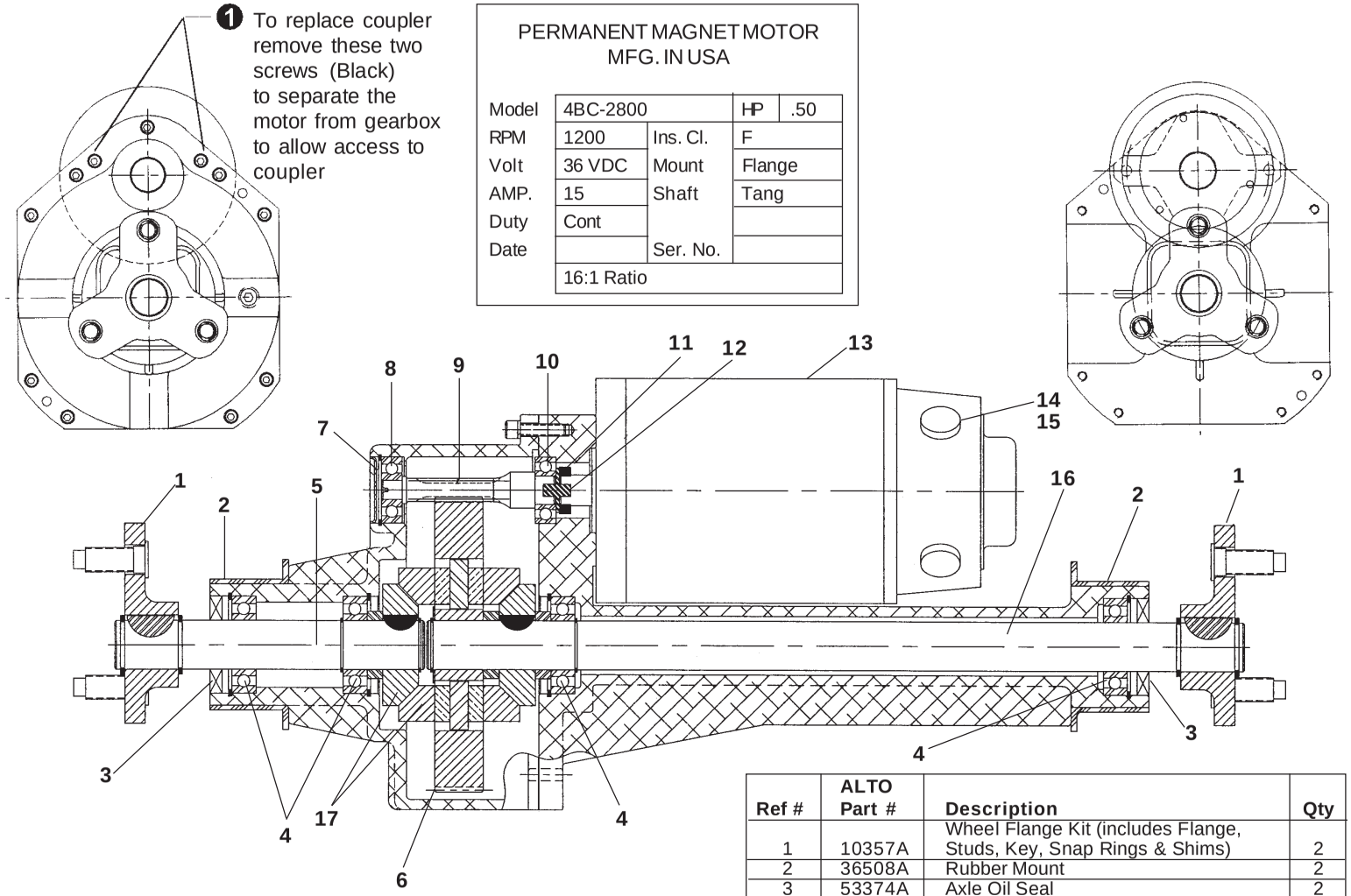
Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Brush Motor #45036A 2/05



Ref #	Part No.	Description	Qty
1	46734A	Stator Assembly (w/Magnets & Clips)	1
2	40318A	Armature Asm.(w/B.E. & F.E. bearings)	1
3	902654	Bearings B.E.	1
4	902550	Bearing F.E.	1
5	51840A	Commutator Bracket Assembly (w/Brush BRD Assembly Leads)	1
6	50520A	Commutator Bracket	1
7	56480A	Strain Relief	2
8	962546	Brush Board Screw	2
9	50517A	Brush Board Asm. (w/springs & brushes)	1
10	448396	Brush Spring	4
11	40826A	Brush Assembly	4
12	55657A	Lead Assembly, Positive	1
13	55656A	Lead Assembly, Negative	1
14	59805A	Helical Washer	1
15	50515A	Thru Bolt	2
16	80501A	Shaft Key	1
17	54238A	B.E. Bracket Assembly (Gear Box)	1



Ref #	Part No.	Description	Qty
1	57846A	Ring, Snap	1
2	507641	Seal, Oil, Small	1
3	52050A	Cap End	1
4	56668A	O'Ring	1
5	51176A	Bearing, Large	1
6	58316A	Shaft & Gear, Gearbox	1
7	902605	Bearing, Small	1
8	54883A	Housing	1
9	58144A	Seal, Oil Large	1
Nl		Darina Grease	4oz.



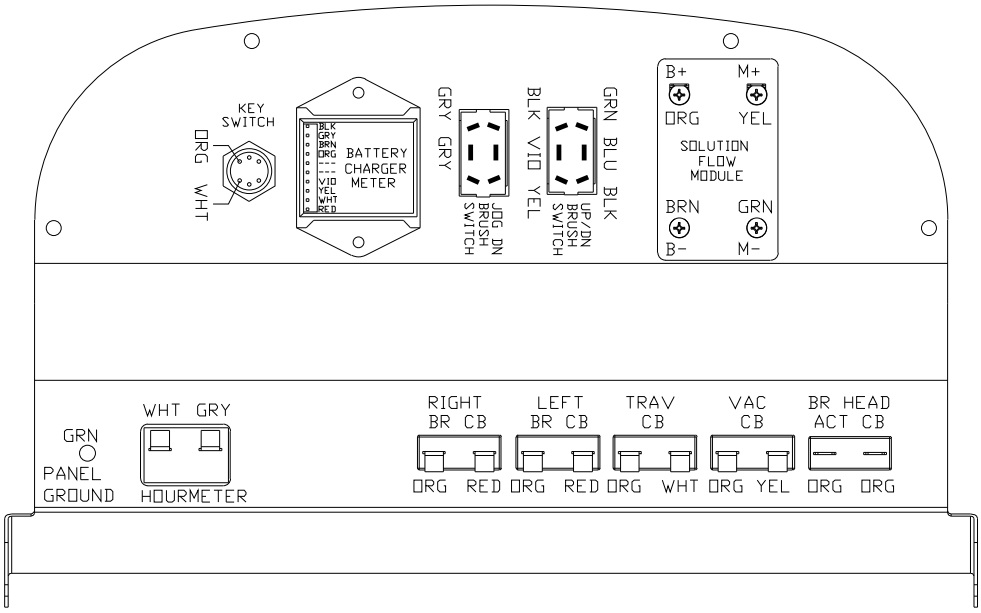
Ref #	ALTO Part #	Description	Qty
1	10357A	Wheel Flange Kit (includes Flange, Studs, Key, Snap Rings & Shims)	2
2	36508A	Rubber Mount	2
3	53374A	Axle Oil Seal	2
4	53375A	Axle Bearing	4
5	53376A	Short Axle	1
6	53377A	Output Gear	1
7	53378A	Input Plug	1
8	53379A	Outer Pinion Bearing	1
9	53380A	Pinion	1
10	53381A	Inner Pinion Bearing	1
11	52663A	Steel Ring, Coupler	1
❶ 12	69195A	Rubber Coupler	1
13	45048A	Motor	1
14	51720A	Brushes w/Springs (Set of 4)	1
15	30074A	Motor Brush Cap (internal Threads)	4
	53382A	Motor Brush Cap (External Threads)	4
16	53383A	Long Axle	1
	54282A	Gearbox Asm w/o motor	1
17	53435A	Miter Gear	4

Parking Brake Spare Parts

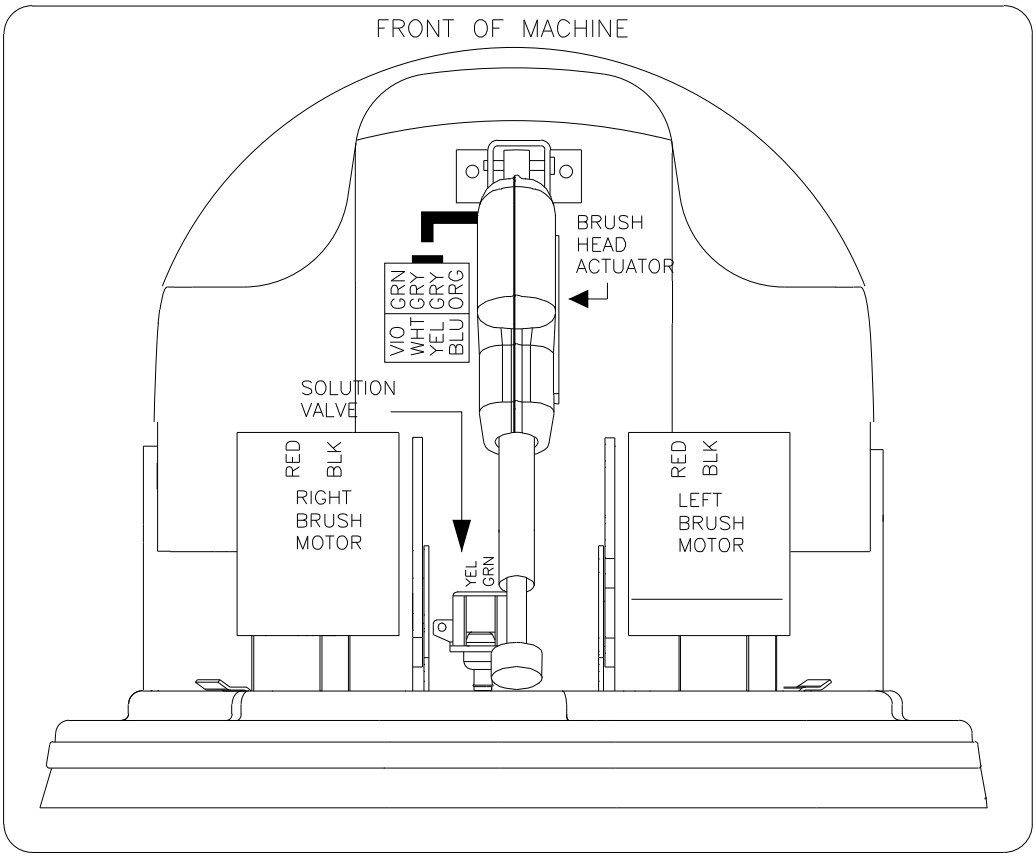
Part No.	Description	Qty
53384A	Pad, Friction	1
53385A	Hub, Shaft	1
80121A	Key, 4 MM - Hub	1
80122A	Set Screw, M3 - Hub	1

NOTES

Nilfisk ALTO
SCRUBTEC 770 S / 784 S / 795 S
Control Panel Connection Diagram 2/05



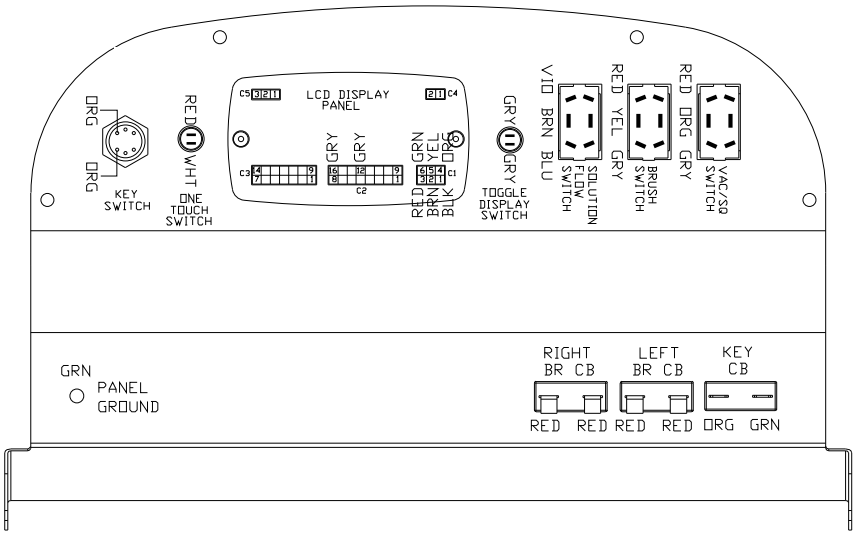
Nilfisk ALTO
SCRUBTEC 770 S / 784 S / 795 S
(Front of Machine) Connection Diagram 2/05



Nilfisk ALTO

SCRUBTEC 770 L / 784 L / 795 L

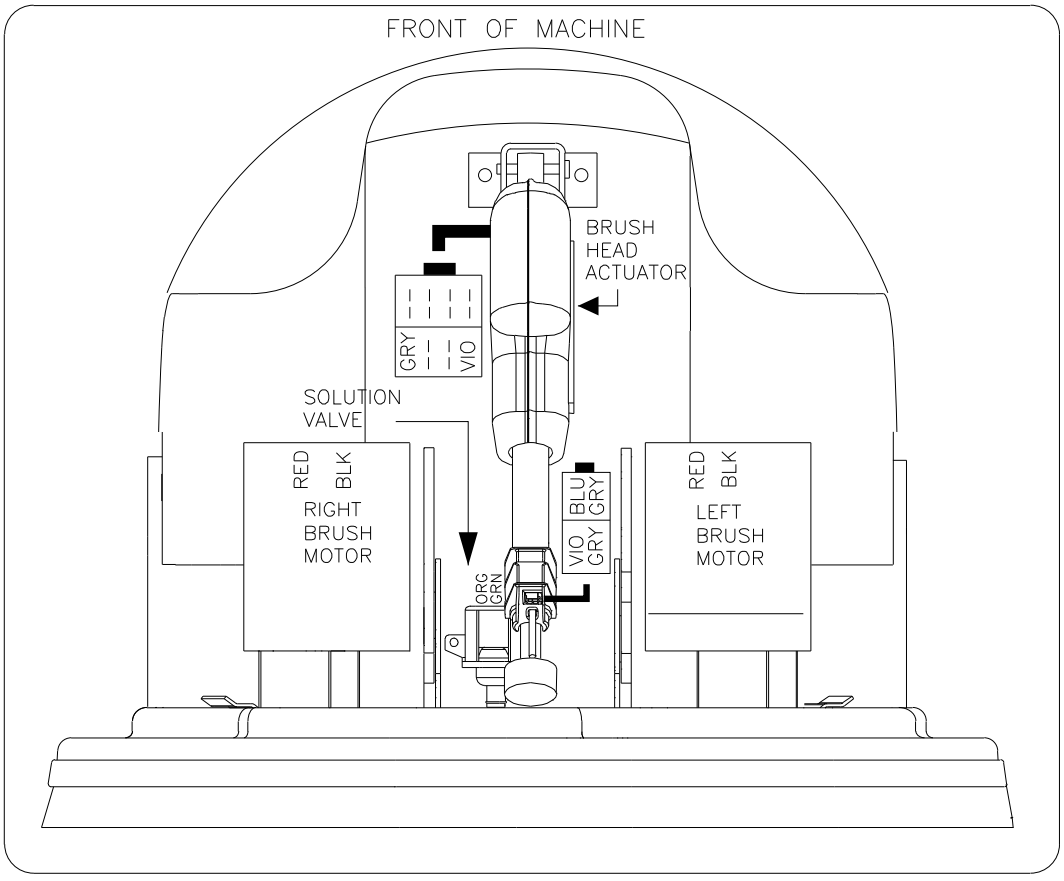
Control Panel Connection Diagram



Nilfisk ALTO

SCRUBTEC 770 L / 784 L / 795 L

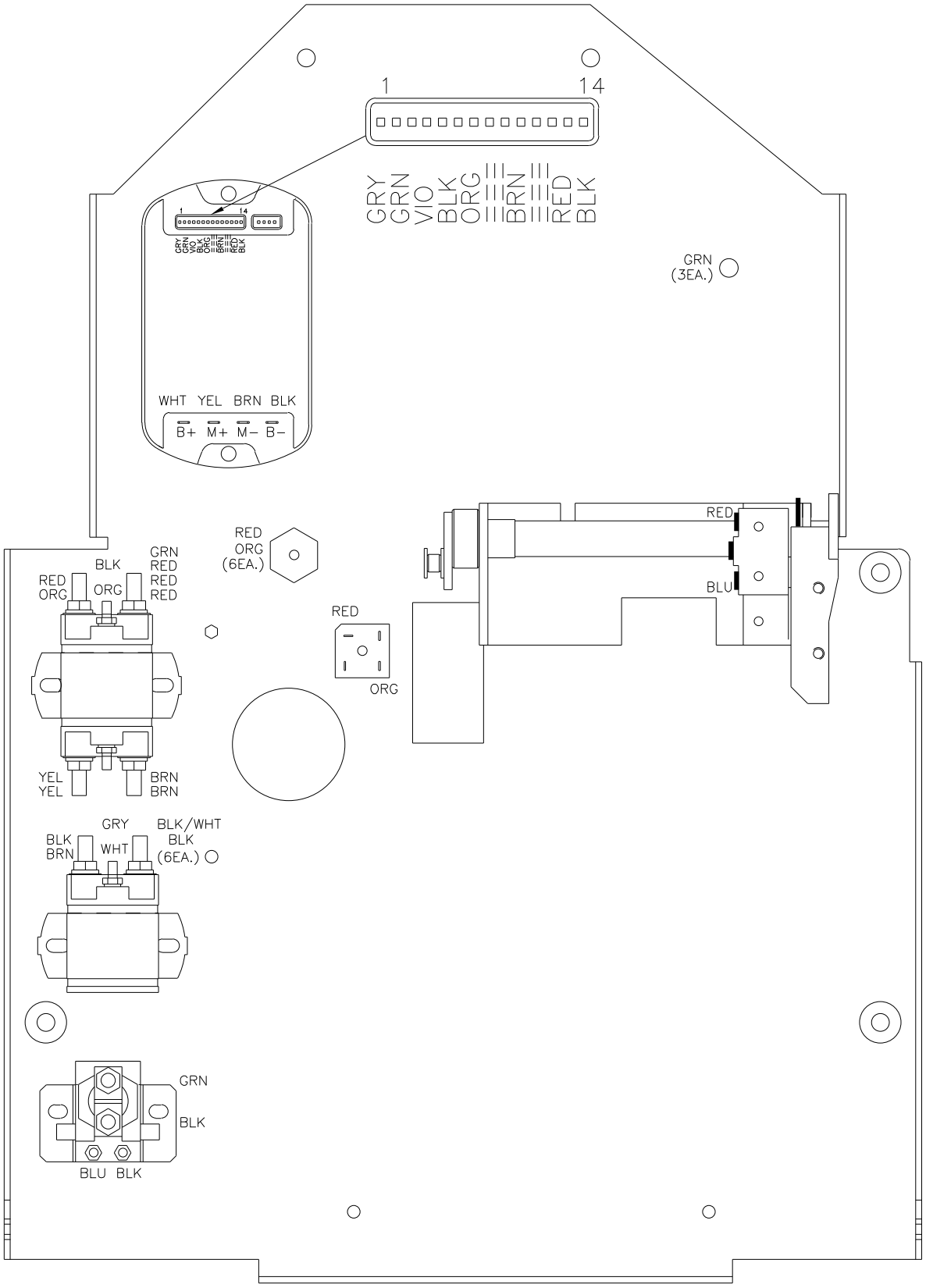
(Front of Machine) Connection Diagram 2/05



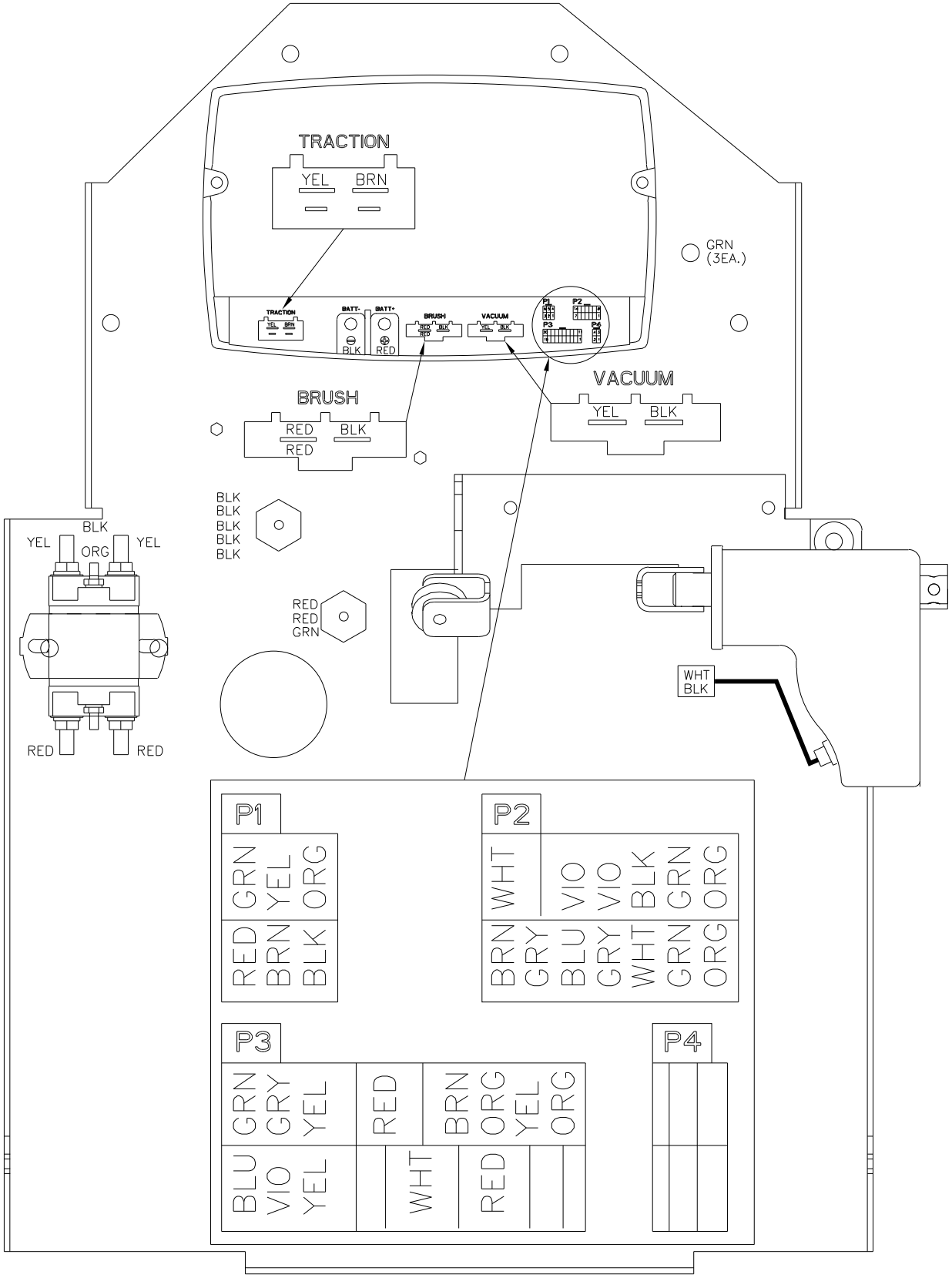
Nilfisk ALTO

SCRUBTEC 770 S / 784 S / 795 S

Electrical Plate Connection Diagram 9/05



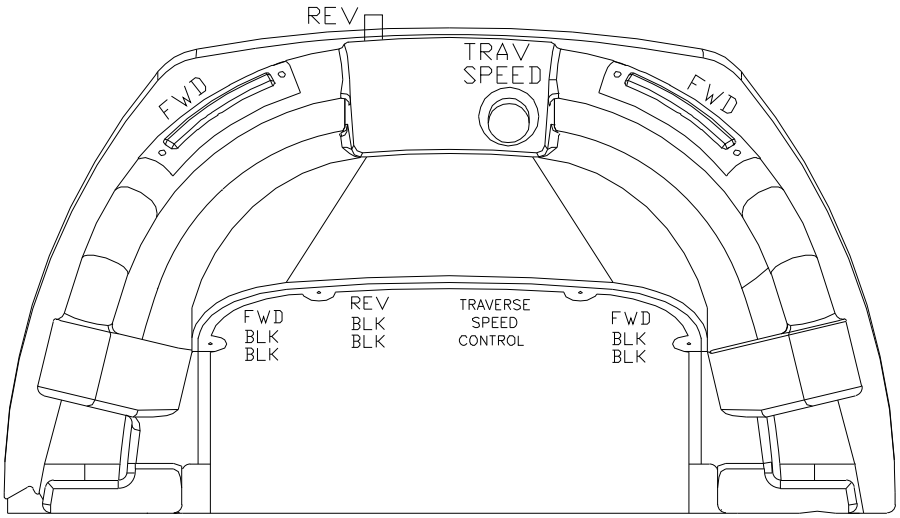
Nilfisk ALTO
SCRUBTEC 770 L / 784 L / 795 L
Electrical Plate Connection Diagram 9/05

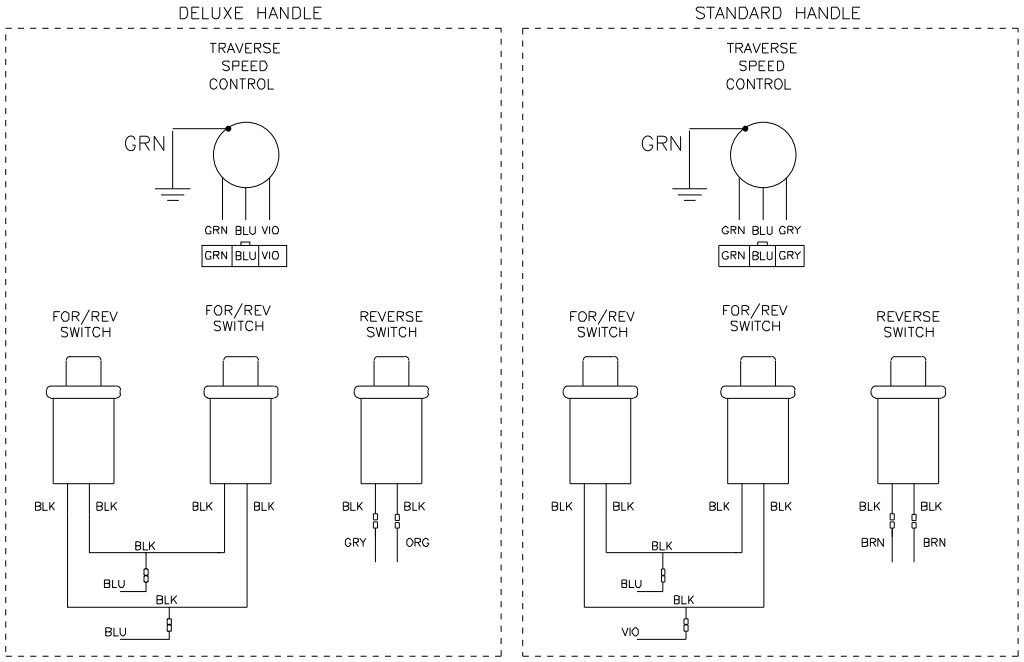


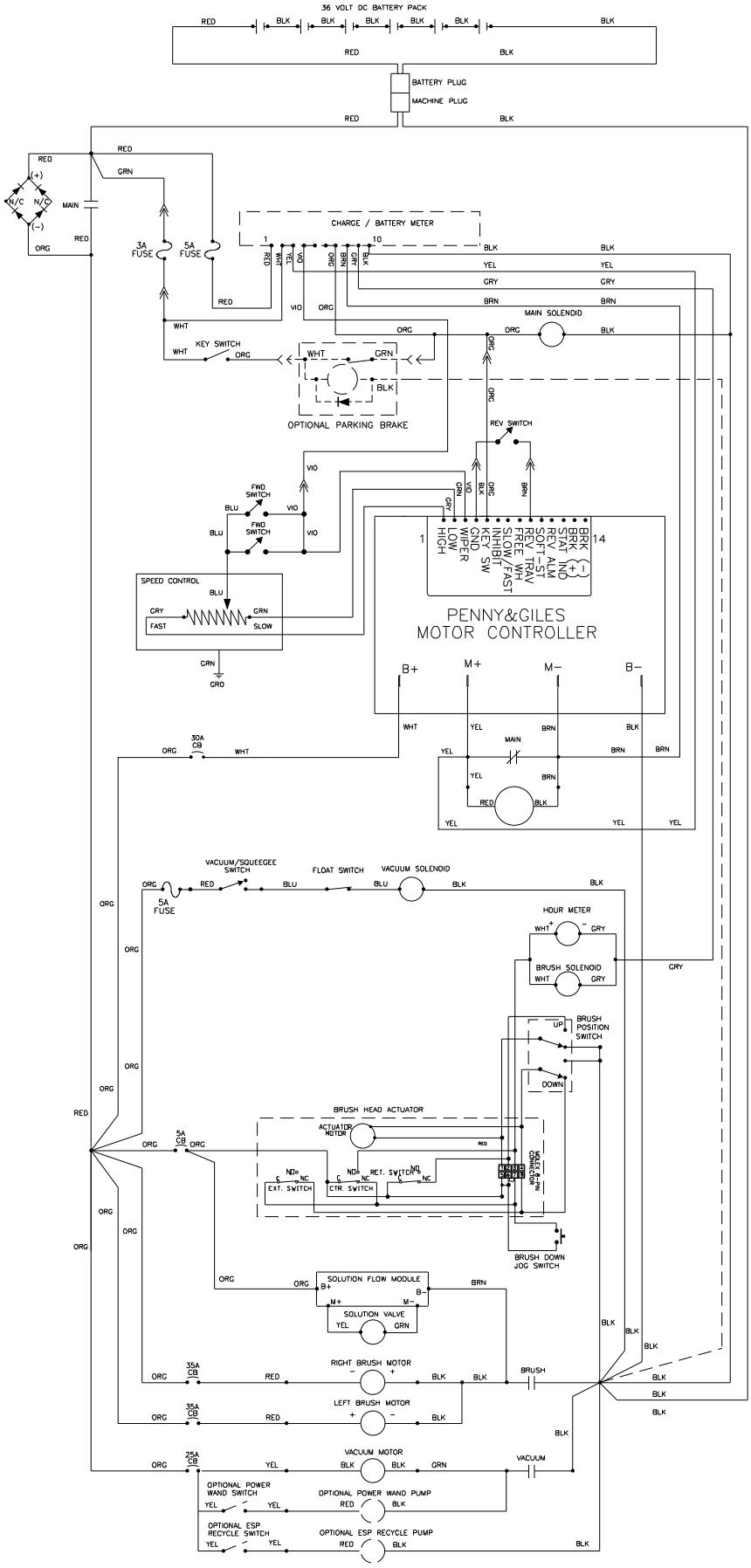
Nilfisk ALTO

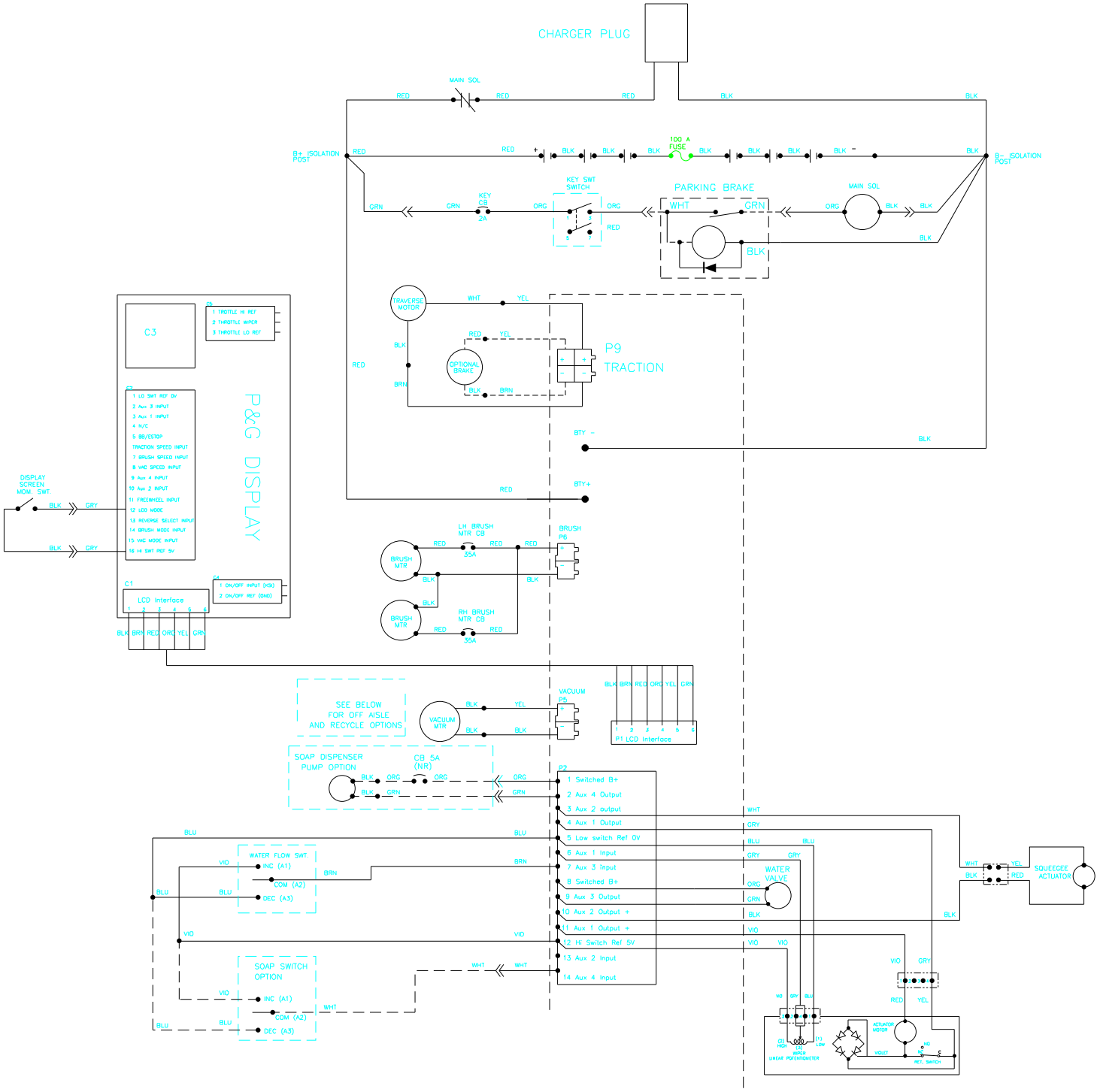
SCRUBTEC 770 L / 784 L / 795 L

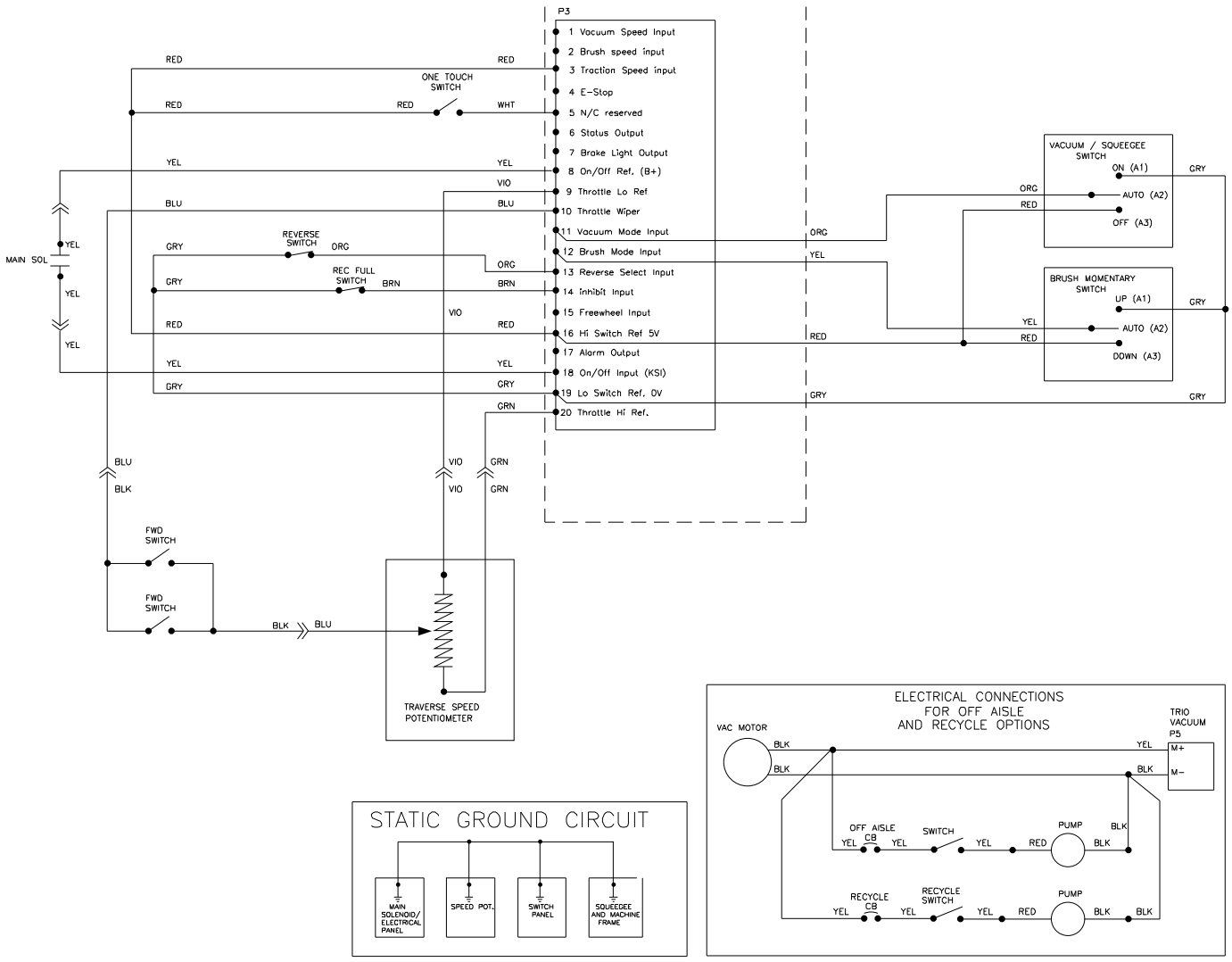
Control Housing Connection Diagram 2/05






36 VOLT DC BATTERY PACK
BATTERY PLUG
MACHINE PLUG
MAIN
3A FUSE
5A FUSE
CHARGE / BATTERY METER
MAIN SOLENOID
KEY SWITCH
OPTIONAL PARKING BRAKE
REV SWITCH
FWD SWITCH
SPEED CONTROL
FAST
SLOW
PENNY&GILES
MOTOR CONTROLLER
B+
M+
M−
B−
30A CB
VACUUM/SQUEEGEE SWITCH
FLOAT SWITCH
VACUUM SOLENOID
5A FUSE
HOUR METER
BRUSH SOLENOID
BRUSH POSITION SWITCH
UP
DOWN
BRUSH HEAD ACTUATOR
ACTUATOR MOTOR
EXT. SWITCH
CTR. SWITCH
RET. SWITCH
BRUSH DOWN JOG SWITCH
SOLUTION FLOW MODULE
SOLUTION VALVE
5A CB
35A CB
RIGHT BRUSH MOTOR
LEFT BRUSH MOTOR
BRUSH
25A CB
VACUUM MOTOR
VACUUM
OPTIONAL POWER WAND SWITCH
OPTIONAL POWER WAND PUMP
OPTIONAL ESP RECYCLE SWITCH
OPTIONAL ESP RECYCLE PUMP


CHARGER PLUG
MAIN SOL
B+ ISOLATION POST
B- ISOLATION POST
100 A FUSE
KEY SWT SWITCH
KEY CB 2A
PARKING BRAKE
MAIN SOL
TRAVERSE MOTOR
OPTIONAL BRAKE
P9 TRACTION
BTY -
BTY+
P&G DISPLAY
C3
C5
1 THROTTLE IN REF
2 THROTTLE WIPER
3 THROTTLE LO REF
C2
C1
LCD Interface
C4
1 ON/OFF INPUT (KSI)
2 ON/OFF REF (GND)
DISPLAY SCREEN MOM. SWT.
LH BRUSH MTR CB 35A
RH BRUSH MTR CB 35A
BRUSH MTR
BRUSH P6
SEE BELOW FOR OFF AISLE AND RECYCLE OPTIONS
VACUUM MTR
VACUUM P5
P1 LCD Interface
SOAP DISPENSER PUMP OPTION
CB 5A (NR)
P2
1 Switched B+
2 Aux 4 Output
3 Aux 2 output
4 Aux 1 Output
5 Low switch Ref 0V
6 Aux 1 Input
7 Aux 3 Input
8 Switched B+
9 Aux 3 Output
10 Aux 2 Output +
11 Aux 1 Output +
12 Hi Switch Ref 5V
13 Aux 2 Input
14 Aux 4 Input
WATER FLOW SWT.
INC (A1)
COM (A2)
DEC (A3)
SOAP SWITCH OPTION
WATER VALVE
SQUEEGEE ACTUATOR
ACTUATOR MOTOR
LINEAR POTENTIOMETER
REV. SWITCH


P3
1 Vacuum Speed Input
2 Brush speed input
3 Traction Speed input
4 E-Stop
5 N/C reserved
6 Status Output
7 Brake Light Output
8 On/Off Ref. (B+)
9 Throttle Lo Ref
10 Throttle Wiper
11 Vacuum Mode Input
12 Brush Mode Input
13 Reverse Select Input
14 Inhibit Input
15 Freewheel Input
16 Hi Switch Ref 5V
17 Alarm Output
18 On/Off Input (KSI)
19 Lo Switch Ref. 0V
20 Throttle Hi Ref.
ONE TOUCH SWITCH
REVERSE SWITCH
REC FULL SWITCH
MAIN SOL
FWD SWITCH
FWD SWITCH
TRAVERSE SPEED POTENTIOMETER
VACUUM / SQUEEGEE SWITCH
ON (A1)
AUTO (A2)
OFF (A3)
BRUSH MOMENTARY SWITCH
UP (A1)
AUTO (A2)
DOWN (A3)
STATIC GROUND CIRCUIT
MAIN SOLENOID/ ELECTRICAL PANEL
SPEED POT.
SWITCH PANEL
SQUEEGEE AND MACHINE FRAME
ELECTRICAL CONNECTIONS FOR OFF AISLE AND RECYCLE OPTIONS
VAC MOTOR
TRIO VACUUM P5
M+
M-
OFF AISLE CB
SWITCH
PUMP
RECYCLE CB
RECYCLE SWITCH
PUMP

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Nilfisk ALTO LIMITED U.S. WARRANTY

This Nilfisk ALTO Industrial/Commercial Product is warranted to be free from defects in materials and workmanship under normal use and service, when operated and maintained in accordance with Nilfisk ALTO's Maintenance and Operations instructions. The warranty period is subject to the conditions stated below.

3 YEARS FOR PARTS AND 1 YEAR FOR SERVICE LABOR (See exceptions below)

Motors must be inspected for carbon motor brush wear at six-month intervals by an authorized Nilfisk ALTO repair station. Failure to comply with the six-month inspection requirement or failure to replace worn motor brushes identified during the inspection will void the warranty on the motors. Cost of the six-month inspection and replacement of carbon motor brushes is the responsibility of the purchaser. In the event of a warranty claim on the motors, proof of inspection and any required motor brush replacement must be provided. This warranty is extended only to the original purchaser for use of the product. It does not cover normal wear parts such as electrical cable, rubber parts, hoses and motor brushes.

BATTERY WARRANTY

In addition to the items above, any original equipment Nilfisk ALTO Battery which becomes unserviceable under normal use within a period of ninety (90) days from date of sale to the original user will be repaired or replaced with one of equal specification at our option, F.O.B. any authorized Nilfisk ALTO Sales or Service Branch, with no charge to the user, except transportation costs. After expiration of the above ninety (90) day period, any battery which fails under normal use will be adjusted to the original user with a new battery of equal specification on an eighteen (18) months pro rate basis from the date of purchase. Adjustment will be determined using the then current list price, plus transportation costs.

Warranty is rendered null and void if battery is not kept filled to the proper level with DISTILLED WATER.

Nilfisk ALTO: POLYDUR® AUTOMATIC SCRUBBER SOLUTION AND RECOVERY TANK EIGHT-YEAR U.S. GUARANTEE

Your new Nilfisk ALTO machine has polydur Solution and Recovery Tanks. Polydur is a rotationally molded, low-density linear polyethylene that won't crack or dent, and withstands most corrosives and temperature extremes. Nilfisk ALTO backs up your Polydur tanks with an eight-year guarantee. If a tank breaks or leaks under normal use within eight years of the date of purchase, it will be replaced free.

Nilfisk ALTO UNIBODY FRAME FIVE-YEAR U.S. WARRANTY

Nilfisk ALTO warranties the frame for a period of five years against defects in materials and workmanship under normal use and service.

STATED WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED

Nilfisk ALTO's liability under this warranty is limited to repair of the product and/or replacement of parts and is given to purchaser in lieu of all other remedies, including INCIDENTAL AND CONSEQUENTIAL DAMAGES.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SPECIFIED HEREIN. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. NO WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY, SHALL BE IMPLIED. A warranty registration card is provided with your Nilfisk ALTO product. Return the card to assist Nilfisk ALTO in providing the performance you expect from your new floor machine.

If a difficulty develops with the product, you should: a) Contact the nearest authorized Nilfisk ALTO repair location or contact the Nilfisk ALTO Service Operations Department, 2100 Highway 265, Springdale, Arkansas 72764, for the nearest authorized Nilfisk ALTO repair location. Only these locations are authorized to make repairs to the product under this warranty. (b) Return the product to the nearest Nilfisk ALTO repair location. Transportation charges to and from the repair location must be prepaid by the purchaser. Nilfisk ALTO will repair the product and/or replace any defective parts with out charge within a reasonable time after receipt of the product.
Nilfisk ALTO, 2100 Highway 265, Springdale, Arkansas 72764.

Nilfisk ALTO reserves the right to make changes or improvements to its machine without notice.
Always use genuine Nilfisk ALTO Parts for repair.

Nilfisk ALTO

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